CALIFORNIA QUARTERLY
OF
SECONDARY EDUCATION

October, 1930

CALIFORNIA SOCIETY OF SECONDARY EDUCATION
2163 CENTER STREET, BERKELEY, CALIFORNIA

VOLUME VI OCTOBER, 1930 NUMBER 1

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The CALIFORNIA QUARTERLY OF SECONDARY EDUCATION is published by the California Society of Secondary Education, in four numbers during the school year, and is issued in the calendar months of October, January, April and June. One dollar and fifty cents of each membership fee in the Society is for a year's subscription to THE QUARTERLY.

Subscription to non-members is $3.00 per year; single copies, 75 cents. Annual subscriptions in all countries in the International Postal Union, $3.25. Members and subscribers are requested to report at once any change of address, giving old as well as new address. Entered as second-class matter, October 9, 1925, at the postoffice at Berkeley, California, under the Act of August 24, 1912.

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2163 Center Street, Berkeley, California.

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The California Quarterly of Secondary Education was established in October, 1925. An extension of its service was made possible in 1927 through a gift by Mr. Carl F. Schader of Santa Monica, California. In his letter of grant, Mr. Schader said:

"Every possible encouragement should be extended to teachers to use the scientific method in their study of problems in education and in the application of such study to the construction of a curriculum that will square itself with the constantly changing conditions of a modern, scientific age, embracing the physical, intellectual and spiritual nature of man. In this field I see great opportunity for laymen to co-operate with our educational leaders for the improvement of the public secondary schools of the State and Nation."

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RESEARCH PROJECTS ON THE SECONDARY SCHOOL LEVEL CARRIED ON IN CALIFORNIA CITIES DURING 1929-1930

Compiled by
FRANK C. TOUTON
Chairman of Committee on Educational Research Activities

INTRODUCTION. Following the plan initiated in the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION of October, 1929, the Society's Committee on Research Activities made a request of the research departments of city school systems of California that they report to the Committee the several significant research projects of their departments for the past school year. Below appears the body of the letter of invitation which was sent August 14, 1930, to the directors of the research departments of twenty-two California cities:

You will recall that the October, 1929, number of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION devoted some forty pages to reports of research projects bearing on problems of the junior high school, senior high school, and junior college which were under way in California for the year preceding. From many sources the research committee has been assured that publication of these reports has been of distinct value to administrators and teachers in secondary schools. In order that a similar and complete presentation of this past year's research projects may be offered in the October QUARTERLY of this year, as is suggested by Horace M. Rebok, Editor of THE QUARTERLY, it is essential that the Chairman of the Committee on Educational Research Activities receive a report of the work done under your direction.

It will make for uniformity of presentation if each research department submits a resumé of each secondary school project under the following heads:

1. Its title.
2. The full name of the person who assumed the major responsibility for the project.
3. The department and the school grade in which the project was carried out.
4. The essential nature of the project, including type of data used and procedure carried out.
5. The findings or outcomes.

The projects to be reported may deal with problems of administration, of curriculum, or with methods of instruction in the field of secondary education, grades 7-14, inclusive.

The value of the report as printed in THE QUARTERLY will depend upon the extent to which the several research departments collaborate. The space allowed to each department will vary from 600 to 2400 words (from one to four pages of THE QUARTERLY), depending on the extent and nature of the materials submitted to the committee.

Your immediate reply stating that you will collaborate will be deeply appreciated by the committee. It is suggested that reports in their final form be submitted after the pattern of the Los Angeles report, page 12, or the Oakland report, page 16,

of the October, 1929, QUARTERLY. Such reports should be in the hands of the Chairman of the Society's Research Committee on or before August 25, 1930.

Anticipating your cordial and thoughtful coöperation, I am,

Faithfully yours,

FRANK C. TOUTON,
Chairman of Committee on Educational Research Activities.

COMMITTEE ON EDUCATIONAL RESEARCH ACTIVITIES

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In reply to the above invitation reports were submitted representing the research activities of the several school departments replying. These reports, practically in the form in which they were received by the Committee, are printed below. They deal with many significant items of research, which have wide application. Principals and secondary school teachers in California may well read the brief resumés here collected and reported.

REPORT OF ALHAMBRA CITY SCHOOLS

HELEN VANDER VEER HOOD, *Director of Department of Educational Research and Guidance*

PROJECT I.

TITLE: Salary study.

AUTHOR: Helen Vander Veer Hood.

WHERE CARRIED OUT: Certificated and non-certificated employees of the Alhambra School Board.

NATURE OF STUDY: In December, 1929, twelve Southern California school systems adjacent to Alhambra were selected for comparison as to salaries paid to teaching and non-teaching employees. Tables and graphs were made out in the following fields, showing Alhambra in its proper ranking:

Kindergarten teachers
Elementary teachers
Junior High teachers
Senior High teachers
Principals and supervisors
Caretakers
Office force

A study of the service, preparation, and training of all teachers then employed in the system was also added to the report, which was issued in mimeographed form and made available to all school employees.

FINDINGS: The comparison made between Alhambra and surrounding school systems indicates that Alhambra salaries for 1929-1930 were lower than the average for the schools studied in both teaching and non-teaching groups.

PROJECT II.

TITLE: A report on the American Council Spanish Test as used with B10 Spanish classes.

AUTHOR: Helen Vander Veer Hood.

WHERE CARRIED OUT: The American Council Alpha Spanish Test was given to all B10 Spanish classes in May, 1930.

PROBLEM: Previous use of standardized tests over a period of two years had revealed the fact that the Spanish classes in Alhambra High School were below standard in all fields. Selection of students, changes in texts, and changes in the method of teaching were gradually worked out during that time, and the present study was made in order to learn whether or not improvement would be found.

FINDINGS: Conclusions which were drawn as a result of the survey were:

1. That the B10 class showed improvement over previous classes in vocabulary and grammar.
2. That the B10 class was still below standard in silent reading.

PROJECT III

TITLE: A study of the success of the criteria for guiding 8A pupils who wish to enter college preparatory courses.

AUTHOR: Frances S. Hannay, High School Counselor.

WHERE CARRIED OUT: High School.

PROBLEM: A regular technique for guiding elementary pupils into the proper high school courses has been worked out during the past three years. The method consists briefly of the following procedure:

A set of questionnaires for each pupil, designed to bring out such factors as health, personality traits, past school record, and the results of standardized tests, is studied thoroughly by the counselor. Individual conferences are then held by the counselor with each entering pupil, explaining the courses and giving advice as to whether or not college preparatory work is advisable. Occasionally the 8A teacher did not agree with the advice given, and it was the policy until proof to the contrary was forthcoming to allow the 8A teacher to advise according to her own judgment.

As each 8A class enrolled for high school, the enrollment cards were checked against the records of conferences, and a list was made of those, 54 in number, who had enrolled against the counselor's advice. To these 54 cases were added all the pupils who took college preparatory courses in the February, 1929, class, 128 in number, which included those who had enrolled in college preparatory work against the counselor's advice but with the teacher's approval; those who had enrolled in college preparatory work against both the counselor's and teacher's advice; and those who enrolled with the approval of counselor and teacher.

The present study was therefore undertaken to determine whether or not the advice given by the Research Department was based upon reliable criteria and to determine whether results warranted the continuation of the guidance work.

FINDINGS:

SUMMARY

1. Out of 54 pupils picked by the Research Department from two entering classes as being unable to make the full quota of recommended grades, 54 pupils failed to do so.
2. Out of a complete entering group of 128 college preparatory students in the February, 1929, class, predictions as to the success or failure of the pupils were as follows:

a. 82%, or 105 cases out of 128, were predicted correctly by the Research Department, according to the records available at this time.
b. 57%, or 74 cases out of 128, were predicted correctly by the 8A teachers, according to records available at this time.

Recommendations based on this preliminary study are:

1. That the study be continued until enough cases are available to render conclusive evidence as to the accuracy of the method now employed in judging the future success of the pupils who choose college preparatory courses.
2. That pupils judged by the Research Department to be doubtful of success be *required* to postpone, during the ninth year at least, one of the solids requiring a recommended grade for college entrance.
3. That, since the predictability of success made by the Research Department seems better than that of the 8A teachers, the 8A teachers follow the recommendations of the Research Department in those cases where disagreement as to prediction occurs.
4. That the following investigations, suggested by the present study, be made:
   a. A determination of the causes for failure to make recommended grades among pupils of high I. Q.
   b. A follow-up of those who fail to make recommended grades, with the object of learning what these pupils finally do.

REPORT OF COMPTON UNION DISTRICT SECONDARY SCHOOLS

PAUL E. MARTIN, *Director of Research*

PROJECT I.

TITLE: Analysis of enrollment, attendance and graduation, 1910 to 1930.

PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.

NATURE: Tabulation of enrollment by class and sex, of average daily attendance by months and years, and size of graduating classes.

FINDINGS: There was an average annual increase in enrollment of 12%, and in graduation of 20% for the 20 year period. The 9th grade constituted 41%, 10th grade 25%, 11th grade 19% and 12th grade 14% of the enrollment for the period studied. From the study of the average daily attendance by months for the past 20 years it is possible to estimate the probable enrollment of any month in the year on the basis of the September enrollment.

PROJECT II.

TITLE: Geographical distribution of the junior high school population.

PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.

DEPARTMENT: Junior high schools.

NATURE: A spot map was made showing the residence of each child living within the district.

OUTCOME: New boundaries were drawn on the basis of this study for the purpose of equalizing the enrollment in the various schools.

PROJECT III.

TITLE: Analysis of teachers' grades.

PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.

DEPARTMENT: High school and junior college.

NATURE: Proportion of grades and drop-outs were computed for each teacher, subject, department and all academic and non-academic subjects.

FINDINGS: Considerable difference in grading standards was found to exist among the various teachers and departments, and in the different subjects. Standards were higher, *i. e.*, a marked tendency appeared to assign lower grades in academic than non-academic subjects, and in the junior college than in the high school.

PROJECT IV.

TITLE: Analysis of pupil failures.
PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.
DEPARTMENT: High school.
NATURE: A comparison of students who failed in one or more courses with a random sampling of students and with the honor students.
FINDINGS: The failure group was of approximately the same average ability level as the control groups, and carried approximately the same number of study hours. The failure group carried a larger number of total hours of work although fewer hours of academic work, and were older than either of the control groups.

PROJECT V.

TITLE: Acceleration and retardation of high school students.
PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.
DEPARTMENT: High school.
NATURE: Proportion of accelerated and retarded students determined.
FINDINGS: 8% of the high school students were accelerated a year or more; 27% were retarded a year or more.

PROJECT VI.

TITLE: Scholarship standing of junior college groups.
PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.
DEPARTMENT: Junior college.
NATURE: Average grade point ratios were figured for non-group students, Greek letter society, Greek letter society probationers, and special students.
FINDINGS: The average G. P. R. for all students was 1.1, for all men 1.1 and for all women 1.3. Greek letter students had a higher average than non-group students, and fraternity probationers had a higher scholastic average than the corresponding group of women students.

PROJECT VII.

TITLE: Prognosis of success in junior college.
PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.
DEPARTMENT: Junior college.
NATURE: Correlation coefficients were obtained between actual achievement in junior college and five prediction indices.
FINDINGS: The number of recommended academic units had the highest prognostic value, and was followed in order by the Iowa Content Examination, the Stanford Reading Test, and the Otis S-A Test of Mental Ability.

PROJECT VIII.

TITLE: Survey of pupil achievement, grades 7-10.
PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.
DEPARTMENT: Junior high school.
NATURE: Each student in grades 7 to 10, inclusive, was given a Stanford Achievement Test.
FINDINGS: Results were studied to discover weaknesses in instruction and as a basis for individual guidance.

PROJECT IX.

TITLE: Survey of pupil achievement, grades 9-12.
PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.
DEPARTMENT: Biological Science, English, Foreign Language, Mechanical Arts, Mathematics, Physical Science.
NATURE: Pre-tests were given at the beginning of the semester followed by achievement tests at the close of the semester. The improvement of individuals and classes was compared.
FINDINGS: The results were of value in the study of individual difficulties and in appraising the instruction given.

PROJECT X.

TITLE: Occupational ambitions of students.
PERSON RESPONSIBLE: Paul E. Martin, Director of Research and Guidance.
DEPARTMENT: High school.
NATURE: The occupational ambitions of students and the occupations of their parents were assigned index numbers by means of Barr's Rating Scale of Occupations. The ambitions of different age groups and ability groups were compared.
FINDINGS: Occupational choices become less ambitious with increasing age, and are more ambitious among the higher ability groups. The extent of educational ambitions for 47% of the students was high school graduation; for 17% graduation from junior college; and for 33% was graduation from a four-year college or university.

REPORT OF THE FRESNO PUBLIC SCHOOLS

W. B. MUNSON, *Assistant Superintendent of Schools and Director of Research*

PROJECT I.

TITLE: Per capita expenditures for libraries in ten California cities.
PERSON RESPONSIBLE: W. B. Munson, Assistant Superintendent and Director of Research.
DEPARTMENT: (1) Elementary schools, (2) Secondary schools.
NATURE OF STUDY: From reports issued by the State Department of Education the amount of money expended for libraries and the A. D. A. in each of the ten cities was obtained. From these figures, the cost per capita was calculated. The purpose was to learn whether or not Fresno was providing for libraries as much money as other cities of the State.
FINDINGS: In elementary schools the cost per capita ranged from $0.811 to $3.221; the median $1.033. Fresno ranked fourth from the highest with an expenditure of $1.162 per pupil in A. D. A.

In secondary schools the cost per capita ranged from $1.165 to $8.257; the median $3.766. Fresno ranked ninth from the highest, with an expenditure of $2.609 per pupil in A. D. A.

PROJECT II.

TITLE: Absence of teachers on account of illness.
PERSON RESPONSIBLE: W. B. Munson, Assistant Superintendent and Director of Research.
DEPARTMENT: Elementary and secondary teachers.
NATURE OF STUDY: This study was made to determine the amount of absence of teachers on account of illness, the proportion of teachers absent, the length of absences and the days of the week on which absences most frequently occur.
FINDINGS: Seventy-eight out of 233 elementary teachers and 101 out of 247 secondary teachers, a total of 179 or 37.3% of 480 teachers were not absent on account of illness. The median teacher was absent 1.35 days. Average absence was 2.92 days per teacher. 68.1% of the absences were for one day or less. These absences of one day or less were distributed among the days of the week as follows: Monday, 28.2%; Tuesday, 15.5%; Wednesday, 14.8%; Thursday, 19.2%; Friday, 22.3%.

REPORT OF GLENDALE CITY SCHOOLS

NORMAN R. WHYTOCK, *Assistant Superintendent*

PROJECT I.

TITLE: Educational survey of the Glendale intermediate schools.
PERSONS RESPONSIBLE: N. R. Whytock and Miss C. L. Fritch.

NATURE OF PROJECT: This survey, including 1649 seventh and eighth grade pupils, was made during the week of October 14, 1929. Form V, New Stanford Achievement Test, was administered, and scores on National Intelligence Test, previously administered, were used.

FINDINGS:

a. Composite achievement expressed in grade equivalents exceeded norm by decimal parts of grades as follows: B7 .1; A7 .2; B8 .4; A8 .3.
b. Minor deficiences shown in history, spelling, physiology and hygiene.
c. Significant accomplishment shown in reading and arithmetic.
d. Median intelligence quotients by grades: B7 107.0; A7 107.2; B8 109.7; A8 105.6.
e. Per cent of acceleration by age: B7 28.3%; A7 23.6%; B8 18.9%; A8 23.5%.
f. Per cent of retardation by age: B7 23.1%; A7 25.8%; B8 24.3%; A8 21.3%.

PROJECT II.

TITLE: Report of pupil failures in the Glendale city schools for the school year 1929-1930.

PERSONS RESPONSIBLE: N. R. Whytock and Miss C. L. Fritch.

NATURE OF PROJECT: This investigation was carried on both semesters of the year 1929-1930 and extended from grades one through eight.

FINDINGS: Findings, applying to grades seven and eight, were as follows:

a. Extent of non-promotion (repetition of complete half grade): First semester 0.7%; second semester 1.4%.
b. Extent of partial failure (number of pupils required to repeat certain subjects but not to repeat complete half grade): First semester 0.9%; second semester 3.2%.
c. Extent of failure by subjects: First semester, spelling 3.4%; arithmetic 3.6%; history 1.6%; English 4.2%. Second semester, spelling 3.0%; arithmetic 4.3%; history 2.4%; English 3.9%.
d. Extent of non-promotion since 1925-1926: January, 1926, 0.8%; June, 1926, 1.3%; January, 1927, 0.6%; June, 1927, 1.2%; January, 1928, 1.0%; June, 1928, 1.3%; January, 1929, 1.6%; June, 1929, 1.5%; January, 1930, 0.7%; June, 1930, 1.4%.
e. Extent of partial failure since 1925-1926: January, 1926, 0.9%; June, 1926, 1.8%; January, 1927, 1.9%; June, 1927, 5.9%; January, 1928, 1.4%; June, 1928 5.1%; January, 1929, 2.1%; January, 1930, 0.9%; June, 1930, 3.2%.

REPORT OF LONG BEACH PUBLIC SCHOOLS

ERNEST P. BRANSON, *Director of Department of Research*

PROJECT I.

TITLE: An inventory of secondary mathematics.

PERSONS RESPONSIBLE: David Segel and Dora D. Stoker, Division of Educational Research.

NATURE OF PROJECT: A test was made from problems contributed by all mathematics teachers in grades 7-14. The emphasis in content was on mathematics useful in life situations. The administration of the test in these grades shows boys and girls to be equal in achievement through the ninth grade. After that time, there is a marked superiority among the boys. A correlation of .30 between the number of semesters of mathematics taken and the mathematics scores in the twelfth grade shows that senior high school mathematics contributes very little to a knowledge of mathematics useful in life in general. The test was also administered to a group of semi-skilled laborers, who made scores corresponding to that of the eighth grade. A men's service club took the test with the result that they were shown to be somewhat superior to second-year college students.

PROJECT II.

TITLE: The equivalence of scores on various tests.

PERSON RESPONSIBLE: David Segel, Division of Educational Research.

NATURE OF PROJECT: The first part of this study equates scores on the Thurstone test with the parts of the Iowa High School Content Test and provides I. Q. equivalents for Iowa scores. The second part of the study provides equivalent I. Q.'s for the Terman and National Tests.

PROJECTS III.

TITLE: Occupations of high school graduates; A study of the 1924 graduates of Polytechnic High School.

PERSON RESPONSIBLE: David Segel, Division of Educational Research.

NATURE OF PROJECT: The purpose of the study was to determine the occupational fields available and those that were entered, and to determine the persistence of students in college. Methods used were a questionnaire to all members of the graduating class of 1924 and the tabulation of the occupations of a typical neighborhood in the city of Long Beach.

Five years after graduation, more than half of the class were preparing for or had entered professions. Long Beach was the residence of less than 40% of the class. A study of the occupations available in Long Beach showed that the city offered less opportunity in manufacturing and clerical work and more in trade and extraction of minerals than other sections of the country. Approximately one-half of the class had entered college, a somewhat smaller percentage than is found in the class four years later. At the latter time Long Beach had established a junior college.

Conclusions of the study are that Long Beach is a favorable location for industry because of transportation, labor, and material costs; but that industries moving to Long Beach will probably bring their own workers with them at the outset. Our educational program should plan for the more permanent positions in community life, namely: the semi-professional, business, domestic and personal service, transportation, and manufacturing, in the order named.

PROJECT IV.

TITLE: A permanent and cumulative pupil record system.

PERSON RESPONSIBLE: Alta Williams, Division of Guidance.

NATURE OF PROJECT: The Guidance Commission recommended the adoption of a report which describes a packet system of cards. The records have been experimented with in tentative form for a year, and are now being printed. There are five cards, each 8½x11, contained in a closed-end folder. The cards are for social data, health data, scholastic data, tests, trait ratings, and vocational guidance data. The system will be installed next semester in 1B, 6A, and 9A, and will not be completely installed in the school system until eleven semesters have elapsed.

PROJECT V.

TITLE: Occupations of part-time pupils.

PERSON RESPONSIBLE: David Segel, Division of Educational Research.

NATURE OF PROJECT: This study classified the occupations of continuation pupils and analyzed all placements made through the junior employment office. It was shown that the boys' jobs centered around the automobile, the girls' around salesmanship. There is need for commercial training for the boys because considerable numbers are engaged as salesmen, stock clerks, or shipping clerks. Twenty-seven per cent of the girls have been placed as saleswomen, 7% in general office work that calls for commercial training. Messenger service, caddying, and newspaper selling were classified as blind alley jobs.

PROJECT VI.

TITLE: Analysis of the record of acceleration and retardation made on March 1, 1930.

NATURE OF PROJECT: In the three-year period, the senior high schools had increased their enrollment 30% as against 20% in the junior high schools, and

13% in the elementary schools. This is taken as evidence of increased holding power of the senior high schools. The data is analyzed by grades and by segments. It is shown that acceleration is virtually complete at the end of the elementary school, and that retardation decreases in the senior high school, probably because of dropping out of pupils from the senior high schools. The usefulness of acceleration is discussed.

PROJECT VII.

TITLE: Investigation of certificate and diploma classification as used in the Long Beach Junior College, with the development of guidance techniques.

PERSONS RESPONSIBLE: David Segel, Division of Educational Research; S. L. Brintle, Counselor; and C. H. Woodruff, Dean.

NATURE OF PROJECT: Teachers' marks and psychological and educational test data furnished a basis for the study made during the first semester of 1929-30 and involved 1000 junior college students. Questions to which answers are sought are: (1) the extent to which the certificate-diploma classification is comparable to a classification by objective data, (2) the responsibility of the teacher for recommending students to college, and (3) justification for the diploma-transfer course. The data show that the classification on the basis of recommended grades is unjust to both certificate and diploma students. The over-lapping in the two groups is entirely too great, and high school marks alone are not a sound basis for predicting college success. By multiple correlation technique, weights are found for the Thurstone Test, and the parts of the Iowa High School Content Test. As a result of this study, a modified equation which also includes the pupil's high school marks will be used for classification purposes in 1929-30.

PROJECT VIII.

TITLE: The automatic prediction of scholastic success by using the multiple regression technique with electric tabulating and accounting machines.

PERSON RESPONSIBLE: David Segel, Division of Educational Research.

NATURE OF PROJECT: This is a technical paper dealing with the use of the Hollerith tabulating equipment for making large numbers of predictions and for homogeneous classification where it is desired to use several items.

PROJECT IX.

TITLE: Population and school growth.

PERSON RESPONSIBLE: Hosea A. Whiteneck, Division of Administrative Research.

NATURE OF PROJECT: Basic principles in developing the method of forecasting future population are: (1) limited territory, and (2) static growth. Population growths were computed by means of logarithmic curves:

(1) $\log P = \log P_o + n \log (1 + .111510)$

(2) $y = 4125.4970 - 210.9843X + 74.4875X^2 + 1243.5972 \log X$

(3) $y = \dfrac{3961.002965}{e^{-.112652X} + .045911}$

The result of these three curves gives the A. D. A. for kindergarten, elementary, and high school for 1920 as 10,708; for 1930 as 26,250; and for 1940 as 48,595. The average ratio of school A. D. A. to city population is 5.3346. This index gives the population of the school district for 1930 as 140,033, and for 1940 as 259,235.

SUPPLEMENTARY REPORT FROM LONG BEACH CITY SCHOOLS

Reported by W. J. KLOPP

PROJECT I.

TITLE: Socialized mathematics.

PERSON RESPONSIBLE: W. J. Klopp.

NATURE AND FINDINGS: A study of the mathematical concepts appearing in first-year algebra and the pupils' ability to apply them to social situations. This study also involved an analysis of type problems offered in modern algebra textbooks for the purpose of determining the nature of the problems and their adaptability to the language of the high school pupil. *High School Teacher,* March, 1930.

PROJECT II.

TITLE: Grammar by rule or practice.

PERSONS RESPONSIBLE: W. J. Klopp and R. D. Woodward.

NATURE AND FINDINGS: Five units have been developed for the purpose of improving the recognition and use of the commonly used grammatical elements in oral and written composition. Unit 1 is based upon the Sentence Idea; Unit 2, the Structure of the Simple Sentence; Unit 3, Kind of Words; Unit 4, the Clause, Phrase, and the Kinds of Sentences; Unit 5, Uses of Nouns and Pronouns.

Each unit is based upon the following principles: Our Goal; Hints for Study; Exercises or Remedial Drills; and Tests.

Two semesters' experience with the units, with approximately 200 cases, showed an improvement in applied grammar of 20% over control groups numbering 300 pupils. *English Journal,* October, 1930.

PROJECT III.

TITLE: Study of the effect of extra-class activities upon the school program.

PERSONS RESPONSIBLE: W. J. Klopp and Charlotte Brecht.

NATURE AND FINDINGS: The study revealed the fact that pupils participating in extra-class activities in the high school are selected from the general student body and not from classes where such activities are taught. For example, in the case of high school plays, the casts are rarely selected from dramatics classes. The result is that the extra-class activities of the high school call for the training of actors and performers rather than the teaching of playing and performing. A plan for correcting this situation appears in the *High School Teacher,* October, 1930.

PROJECT IV.

TITLE: Algebra review technic.

PERSONS RESPONSIBLE: W. J. Klopp and Leslie Nason.

NATURE AND FINDINGS: A study covering a period of three semesters, purposing to show the effect of organizing algebra content into teaching units, upon the saving of time in conducting reviews; improvement of the power of application; improvement of skills in algebraic manipulations; retention of mathematical concepts and skills; and size of class. A population of over 200 pupils in third semester algebra review showed a saving of time of 25%; an improvement of skills in manipulation of 49%; and an appreciable gain in power of application.

The measurement of retention of skills and ability to apply fundamentals showed a higher per cent of performance in each of the first four units, with a slight increase in ability to use the fundamental concepts in new material. The control groups showed a definite loss in ability to recall and apply fundamentals to new situations. The interval used was 12 weeks. The study further revealed the cumulative effect of weakness in the control groups on their ability to succeed in successive units in the review.

A class of 50 pupils was taught first-year algebra by one teacher by this unit plan, and their median score on the Columbia Research Algebra Test at the end of the year was equal to that of the median of the norm for two years. The lowest score was higher than the median of the first year norm.

REPORT OF LOS ANGELES SECONDARY SCHOOLS RESEARCH ACTIVITIES AND PROJECTS 1929-1930

ELIZABETH L. WOODS, *Director Psychology and Educational Research Division*

(A limited number of copies of the issues of the *Los Angeles Educational Research Bulletin* referred to in the following abstracts are available for distribution to persons who may be interested in reading the complete articles.)

"Secondary-School Curriculum-Development," by M. E. Herriott, Assistant Director, Psychology and Educational Research Division. See: "The Present Status and Organization of Secondary-School Curriculum-Development in Los Angeles," "The Los Angeles Secondary-School Curriculum-Development Program," "What Place Has the Experimental Method in Curriculum-Development?" and "Recent Changes in the Los Angeles Secondary-School Curriculum," in *Los Angeles Educational Research Bulletin*, Vol. 9, No. 1, September, 1929, pp. 2-9; Vol. 9, No. 4, December, 1929, pp. 2-6; Vol. 9, No. 5, January, 1930, pp. 14-16; Vol. 9, No. 9, May, 1930, pp. 2-7.

A long-term project in secondary-school curriculum-development was initiated in the spring of 1929 but did not get well under way until the school year of 1929-1930. The status of the secondary-school curriculum and of curriculum-development procedures was surveyed. An organization for curriculum-development was perfected which took into consideration many factors, among which the following are the most important: (1) the history and present status of curriculum-development in Los Angeles, (2) existing interests and procedures, (3) the function of curriculum workers, (4) best present-day curriculum development theories and practices, (5) recognized principles of administrative organization.

The resulting curriculum-development organization was planned to provide for active participation of teachers, department heads, principals, superintendents, directors and supervisors, curriculum specialists, and the public.

As soon as this organization had been effected, a program of curriculum-development was formulated, a program such as cannot be carried to completion short of four or five years.

In this program, curriculum-development is considered as including the determination of the purposes of education, the program of studies, the organization of this program into curricula, the selection and development of materials of instruction, the preparation of courses of study, and the development and use of so-called curriculum tests.

Thus far, some preliminary consideration has been given to the purposes of secondary education, but much remains to be done in the future. Considerable attention has been given to the program of studies and the organization of this program into curricula. This will be discussed a little more fully in the following paragraphs. The selection and development of materials of instruction has in the main revolved about the problem of textbook selection, which is described as a separate project. The preparation of courses of study is also described as a separate project, as is the development and use of curriculum tests.

The present stage of the program of curriculum-development is primarily one of unification, clarification, systematization, recognition of present best practices, and stabilization. Thus far the attempt has been to systematize and to bring a reasonable uniformity into the present program of studies. The previous organization of this program into curricula has been carried one step further. The life career motive has been accepted as the major guiding principle. As a result, the following five curricula are recognized as basic for the junior high schools:

1. Academic curriculum.
2. Commercial curriculum.
3. General curriculum.
4. Home-making curriculum.
5. Industrial curriculum.

For the senior high schools, the following eight curricula have been recognized:

1. Academic curriculum.
2. Agriculture curriculum.
3. Commercial curriculum.
4. Engineering (preparatory) curriculum.
5. Fine Arts curriculum.
6. General curriculum.
7. Home-making curriculum.
8. Industrial curriculum.

The requirements for graduation from the Los Angeles junior and senior high schools have been revamped so as to conform with the new state requirements and new entrance requirements of the University of California, yet observing, in so far as possible, the demands of universalized secondary education.

PROJECT II.

"Courses of Study." COMMERCE, by Albert E. Bullock, Supervisor, Commercial Education Division. ENGLISH, by Mabel C. Hermans, Research Assistant, Psychology and Educational Research Division. INDUSTRIAL ARTS, by Leslie G. Stier, Supervisor, Vocational Education Division, and Edward B. Dale, Coördinator, Vocational Education Division. LATIN, by Esther DeWater Abbott, Hollywood High School, and M. E. Herriott, Assistant Director, Psychology and Educational Research Division. SAFETY, by E. B. Lefferts, Supervisor, Safety Education Division; Katharine L. Carey, Assistant Superintendent, and M. E. Herriott, Assistant Director, Psychology and Educational Research Division. SOCIAL STUDIES, by Vivian F. M. Olson, Research Assistant, Psychology and Educational Research Division.

Courses of study are in preparation in the several fields mentioned above. Most of them have been issued in mimeograph form. Those in junior high school English, safety, and ninth-grade social studies are now on the press.

PROJECT III.

"The Selection of Text books." GENERAL SCIENCE, by Charles H. Nettels, Assistant Director, Psychology and Educational Research Division. GEOMETRY, by Florence D. Fuller, Assistant Supervisor, Psychology and Educational Research Division. GUIDANCE, by Charles H. Nettels, Assistant Director, Psychology and Educational Research Division. JUNIOR BUSINESS TRAINING, by Albert E. Bullock, Supervisor, Commercial Education Division. MODERN FOREIGN LANGUAGES, by George W. H. Shield, Supervisor, Modern Languages Division. PHYSICS, by M. E. Herriott, Assistant Director, Psychology and Educational Research Division.

Textbooks were evaluated according to a fairly objective procedure in the several subjects mentioned above. Adoptions were on the basis of this evaluation in all of these fields except Junior Business Training, where an extension of time was requested. Descriptions of the methods used and of the textbook evaluation and adoption procedure for Los Angeles will appear in a forthcoming issue of the *Los Angeles Educational Research Bulletin.*

PROJECT IV.

"Vocabulary Scale," by Alfred S. Lewerenz, Statistician, Psychology and Educational Research Division. See: "An Experiment in Evaluating Books Read and Enjoyed by School Children," "Objective Measurement of Diverse Types of Reading Materials," and "Vocabulary Difficulty of the New Stanford Achievement Reading Test," in *Los Angeles Educational Research Bulletin,* Vol. 9, No. 1, September, 1929, pp. 10-14; Vol. 9, No. 2, October, 1929, pp. 8-11; Vol. 9, No. 7, March, 1930, pp. 14-15.

A scale for measuring the vocabulary difficulty of books is in process of development. In its present form, this scale gives a fairly satisfactory measure of vocabulary difficulty and diversity, with some prospect of a measure of sentence structure being perfected. This scale has been found to be very serviceable in evaluating textbooks.

PROJECT V.

"Junior High School Science Tests," by Charles H. Nettels, Assistant Director, Division of Psychology and Educational Research. To be published in the *Los Angeles Educational Research Bulletin.*

Several years ago a new course in B8 science, required of all pupils, was introduced into the Los Angeles junior high schools. A committee was appointed which has worked for several years in the preparation of the course of study for this subject. The present course is in the nature of an exploratory course in science, and is divided into three sections: plant life, animal life, and physical forces. During the past year committees have been at work attempting to evaluate the course. One committee prepared a set of three tests based on the course of study as at present constituted. The junior high schools have tried out the tests, and medians have been found for each school. The reliability coefficients of the three tests are .83, .89, and .91, respectively.

PROJECT VI.

"Los Angeles High School Graduates," by Charles H. Nettels, Assistant Director, Division of Psychology and Educational Research. See: *Los Angeles Educational Research Bulletin,* Vol. 9, No. 6, pp. 8-10.

The yearly State reports of the secondary-school principals were examined in order to ascertain certain facts about high school graduates. It was found that 18.1% of the total enrollment in grades 10-12 actually graduated, and that the rate varied from 7.7% in one school to 30.5% in another. Of the graduating students 22.1% were recommended for college. In this case the percentage varied from 10% to 40%. Twenty-four per cent of graduating girls received recommendations, as against 20.1% of the boys. The girls comprised 53% of the graduating classes and 57% of the recommended group. These graduating students indicated their future educational plans. One hundred and twenty-two different institutions were selected, in 31 states.

PROJECT VII.

"A Study of the New Stanford Achievement Reading Test Norms," by Ellen Alice McAnulty, Statistician, Division of Psychology and Educational Research. To be published in the *Los Angeles Educational Research Bulletin.*

This study was made because some of the high school counselors felt that the norms, as established by the authors of the test, gave grade placement values higher than the ability of the pupils warranted. Data on chronological age, I. Q., paragraph meaning score, word meaning score, and total reading score were collected for some 2500 cases. It was found necessary to correct the data so that they would more nearly correspond to a normal distribution, and to determine the probable median mental age. For this latter purpose a formula was derived. After the necessary corrections were made, in the majority of instances there was found to be a close agreement between the expected median grade placement and the actual median grade placement.

PROJECT VIII.

"Preparing the Mentally Handicapped Child for Wage-Earning and Citizenship," by Mary Florence Mecredy, Division of Psychology and Educational Research. See: *Los Angeles Research Bulletin,* Vol. 9, No. 7, March, 1930, pp. 6-8.

The writer reports on her work of studying the community adjustments—especially to industry—of mentally handicapped children, which work has been undertaken in order to bring about the improvement of instruction for these pupils. The study has centered about the traits characteristic of the subnormal child, the social environment from which he comes and the industrial situations into which he must be adjusted. A study of the occupations in which these pupils are employed shows a rather large variety of possibilities, and of course more for boys than for girls. Most of these jobs were secured by the children themselves; unquestionably more openings could be found by well-trained placement workers.

PROJECT IX.

"A Study on the Possibilities of a No-Home-Study Program in Junior High School," by Alice F. Lusk, Vice-Principal, Adams Junior High School. See: *Los Angeles Educational Research Bulletin,* Vol. 9, No. 10, June, 1930, pp. 2-9.

One of the studies made by the Pupil Load Committee of the Los Angeles Principals' Association involved three junior high schools. The amount of time spent in home study was first ascertained. Teachers were then questioned as to their attitudes relative to a no-home-study program. They were then interested in trying out such a program. A number of subordinate studies were carried out by means of standardized tests. The results indicated possibilities of greatly reducing the home-study load of pupils by increasing the effectiveness of teaching technique.

PROJECT X.

"The Problem of Pupil Failure," by John R. Hoist, Venice High School. See: *Los Angeles Educational Research Bulletin,* Vol. 9, No. 7, March, 1930, pp. 9-13.

Many high schools have taken the attitude that the prevention of pupil failure is one of the most important problems of secondary education. Mr. Hoist reports the efforts of Venice High School in this direction, indicating the method of approach and presenting forms which have been found helpful. A distribution of teachers' marks for one quarter is shown.

PROJECT XI.

"Measurement at Garfield High School," by Rubetta D. Brown, Counselor, Garfield High School. See: *Los Angeles Educational Research Bulletin,* Vol. 9, No. 6, pp. 11-15.

Schools everywhere are making increasing use of objective tests in the improvement of instruction. This article discusses the use of tests in the various school departments: English, mathematics, science, social studies, language, home economics, mechanical arts. It tells of the purposes to which intelligence tests and trait rating scales are put. A number of tables are given which show the results of improvement in mathematics after two years of intensive study. Tests in arithmetic reasoning and fundamentals were given to entering pupils and again at the end of two years' time. All pupils are also given these tests and corrective work provided for those needing it.

PROJECT XII.

"Some Results of a Visual Education Lesson in Junior High School Social Studies Taught With the Aid of Flat Pictures," by Alfred S. Lewerenz, Statistician, Psychology and Educational Research Division. See: *Los Angeles Educational Research Bulletin,* Vol. 9, No. 3, November, 1929, pp. 4-16.

The purpose of this investigation was to ascertain the relative effectiveness and interest value of different types of flat pictures, varying both as to finish and subject. Eight photographic stills from "Columbus," one of the chronicles of American films, were made up into books having half the pictures soft finish and half sharp finish. Historical descriptions sufficient to give a background for appreciating each picture were also included. The pupils were given an opportunity to study and discuss the pictures. They were then asked as to their preferences and tested for the information gained. The results indicated that superior intelligence attained superior results in the visual field, although visual aids are apparently relatively more effective tools with those of less-than-average intelligence than with those of above-average intelligence. The less popular pictures tend to be appreciated by pupils above the average mentally. The story element picture tends to be appreciated by children of less-than-average mentality. The diffused or soft finish is satisfactory for close-ups, but a sharp finish seems to be a bit more effective for long shots.

PROJECT XIII.

"A Study of the Success of Pupils of Superior Mental Ability in the High Schools of Los Angeles," by Cora Lee Danielson, Assistant Supervisor, Psychology and Educational Research Division, Los Angeles City Schools.

The study concerns itself with 665 pupils of superior mental ability in the junior and senior high schools of Los Angeles. The pupils, with an I. Q. range from 120 to 181, constitute two groups: 284 children who previous to their enrollment in high school had been segregated in Opportunity A rooms for curriculum enrichment, and 381 pupils who had received their elementary instruction in regular classes. The letter grades given to the pupils by the teachers in junior and senior high schools were subjected to statistical treatment to determine the effectiveness of the special room instruction as preparation for high school work.

A comparison of the successes of the two groups of pupils in terms of the percentage of recommended grades received, a comparison in terms of grade points earned in each of the half years of high school,and a comparison in terms of the percentage of failures given in solids were made.

The comparisons seem to indicate that the children who had been segregated had received more effective preparation for high school work than those who had remained in regular classes. They made more A and B grades in high school. Their letter grades, measured in grade points, indicated a higher type of educational accomplishment. They were credited with fewer failure marks.

REPORT OF OAKLAND PUBLIC SCHOOLS

R. E. RUTLEDGE, *Director of the Department of Research and Auxiliary Agencies*

RESEARCH STUDIES CARRIED ON UNDER THE DIRECTION OF THE DEPARTMENT OF RESEARCH

PROJECT I.

TITLE: Building and sites program for the Oakland public schools.

PERSONS RESPONSIBLE: R. E. Rutledge, J. Frederic Ching.

NATURE OF THE STUDY: The purpose of the building and sites survey in Oakland may be stated as follows:

1. To determine the population trend for the entire city as well as for small areas within the city.
2. To determine the adequacy of each school plant with reference to increased or decreased predicted enrollments for the next ten years.
3. To propose a building and sites program which will eventuate in the most economical and efficient administration of the school system.

The first part of this investigation is practically complete, namely, that of studying the distribution of population trends. The study of the school plant which is now under way will be very thorough from the standpoint of the plant as to educational adequacy.

A very careful criticism of school housing construction is being prepared with a view toward eliminating errors in design as well as in the materials used. The aim of this phase of the investigation will be to revise the school house building standards, based upon results of actual use of such materials and specifications as were set up to guide the construction of the buildings authorized in the 1924 bond issue.

PROJECT II.

TITLE: Survey of algebra in H9 grade.

PERSON RESPONSIBLE: C. C. Grover.

SCHOOLS INVOLVED: All junior high schools in the city.

NATURE OF PROJECT: A number of items of information were desired by the superintendent in charge of secondary schools, some of these being:

1. The efficiency of instruction in algebra in the H9 grade.
2. The relative efficiency of instruction in algebra in the various junior high schools.

For these purposes, the Columbia Research Bureau Algebra Test was given to all pupils who had completed two semesters of study in algebra.

OUTCOMES: Much valuable information as to the efficiency of instruction in algebra was secured and made available to the assistant superintendent in charge of secondary schools and to the committee of principals on the improvement of instruction in mathematics.

List of Reports Issued by the Department of Research and Auxiliary Agencies

Report on H8 Grade Mental Test.

Report on Classification Test in L7 Grade.

Report on Follow-up of High School Graduates.

Report on Destination of Pupils (predicted enrollment for each secondary school).

Junior High School Term Progress Report.

Senior High School Term Progress Report.

L10 Scholarship Report.

RESEARCH STUDIES CARRIED ON BY MEMBERS OF OAKLAND TEACHING STAFF UNDER DIRECTION OF DEPARTMENT OF RESEARCH AND AUXILIARY AGENCIES

PROJECT I.

TITLE: Literature for the junior high school.

AUTHOR: Mrs. Edythe M. R. Banta.

NATURE OF STUDY: Compilation and evaluation for grade placement of materials for the study of literature in the junior high school. Materials are grouped under the following heads: Ballads, Narrative Poems, Lyrical and Reflective Poetry, Short Story, Long Fiction for the Seventh, Eighth, and Ninth Grades, Non-fiction for the Seventh, Eighth, and Ninth Grades, Plays for the Seventh, Eighth, and Ninth Grades.

PROJECT II.

TITLE: The technique of content analysis applied to the course in instrumental drawing.

AUTHOR: O. Howard Caya.

NATURE OF STUDY: Probable future occupational fields of students in instrumental drawing were determined, and successful representatives of each of the occupations listed were requested to rate the importance of various items of the course. On the basis of these ratings, certain topics were recommended to be required of all classes, while others, previously required, were made optional. In addition, the study discovered topics not now taught which should be added to the course.

PROJECT III.

TITLE: A study of the Citizenship-Point Plan as operative in the high schools of California.

AUTHOR: Eleanor Merritt Doherty.

SCHOOLS INVOLVED: All the senior high schools in the State.

PROBLEM: The problem of the study was to determine the present status of plans using points to evaluate the traits of students, and to discover possible tendencies in the working of such plans.

A questionnaire was devised and, with the coöperation of the State Department of Education, sent to all the senior high schools.

FINDINGS BASED ON REPLIES RECEIVED FROM NINETY PER CENT OF THE SCHOOLS:

1. The Citizenship-Point Plan may well be used as a device for motivating character development and for rating character for administrative purposes.
2. Such systems should include faculty and student coöperation.
3. Student participation should be carefully supervised and used with the understanding that the principal is the ultimate authority.
4. Plans should be so constructed and operated that they encourage and reward rather than merely punish.

PROJECT IV.

TITLE: Determination of a procedure by which to construct a general curriculum for a selected high school.

AUTHOR: P. R. Bullock.

SCHOOL INVOLVED: This study was made in the low-tenth grade of the McClymonds High School in the fall of 1929.

PROBLEM: The problem was to determine whether that data upon which to base revisions in the general curriculum may be obtained from the pupils themselves, and the most efficient method of obtaining it.

The case study technique was used in order to determine the attitude of the pupils relative to questions with respect to the educational, social, and economic status of their families.

RESULTS OF THE STUDY: The pupils showed no hesitancy in supply information of a personal nature, provided they felt that it was necessary in order that the curricula might be revised the better to serve their interests and their needs.

The amount of time necessary to make a case study survey is so great that a suggested procedure is outlined whereby the same information may be obtained by a properly trained teacher from small groups by means of a questionnaire.

PROJECT V.

TITLE: The use of school auditoriums.

SCHOOLS INVOLVED: Public schools of Oakland, San Francisco, Richmond, Alameda, and Berkeley.

AUTHOR: Russel M. Sanford.

NATURE OF STUDY: This is a study of auditorium capacity and utilization in 139 elementary, junior high, and senior high schools. Among other findings, it was determined that the median senior high school auditorium seats 82% of the student body, is occupied 63% of the time, with 7.6% of the total pupil hours of use utilized. Corresponding figures for junior high schools are: 82%, 40%, and 6.4%; for elementary schools: 63%, 35%, and 5.6%. Audiences in auditoriums number 100 or less persons 80% or more of the time they are in use, and less than 10% of the time they are in use by audiences which are 50% to 100% of the capacity of the auditorium.

PROJECT VI.

TITLE: Vocational opportunities for atypical students.

AUTHOR: Thad. W. Stevens.

NATURE OF STUDY: The technique employed was that of a follow-up through personal contacts and a questionnaire directed to the teachers of present and former atypical class pupils.

A spot map reveals the geographical distribution of atypical children within the city. Other data afford information on the racial background, median age, and I. Q. of the group together with other facts bearing upon the economic status of the families of these children. Comparative cost data are also presented.

The follow-up shows the extent to which atypicals are absorbed by the industrial world and the job levels upon which they may hope to succeed.

PROJECT VII.

TITLE: Tests in elementary Gregg shorthand.

AUTHOR: B. W. Spencer.

NATURE OF STUDY: With the coöperation of eight other cities, a series of definitely timed and carefully graded unit tests, stressing essential vocabulary, was given to over 4000 pupils in elementary Gregg shorthand.

Results:

1. Percentiles have been computed on the tests, thus providing a rather satisfactory measure of elementary shorthand instruction.
2. The feasibility of speed dictation from the beginning has been demonstrated.

The study is being continued to secure a much larger number of pupil scores, and an attempt will be made to establish norms of accomplishment for various levels of pupil G. I. Q.

PROJECT VIII.

TITLE: The office of the dean of girls in the senior high schools of California.

AUTHOR: Helen L. Wirt.

NATURE OF THE STUDY: Supplemented by personal interviews and observations, a questionnaire study which included 83% of the deans in the senior high schools was made to ascertain the present duties of the office.

FINDINGS: On the whole the status of the office, so far as increase in the numbers of deans, training, salary, time allowed, office equipment, clerical assistance, and integration with other departments are concerned shows a discernible improvement over that reported in 1923 by the Committee of Fifteen of the California High School Teachers Association. On the other hand, the advantages in these respects seem to be with the dean in the larger school. In general, too little attention seems to be given to health guidance, and there are too few systematic case study data either kept by the dean or accessible to her.

PROJECT IX.

TITLE: A survey of truancy in Oakland, 1928-1929.

AUTHOR: Paul Fleming.

NATURE OF STUDY: Based on reports of truancy from schools to the Supervisor of Attendance and Child Welfare. Great variation found in number of cases of truancy per 100 A. D. A. in different schools. Tabulations made of age and grade distribution show that truancy is a problem of junior and senior high schools; of boys about the ages of fifteen and sixteen. There seems little relationship between day of the week, holidays, special events, or the weather and the occurrence of truancy. There is a lack of similar data from other cities which would make possible a comparative study.

PROJECT X.

TITLE: Construction of a geometry test.

AUTHOR: Jean Tuttle.

NATURE OF THE STUDY: In printed form. Consists of two practically equivalent forms, A and B. Each form consists of four parts: computation, construction, true-false, and control completion.

It aims to test: general information about geometry, ability to prove a statement, understanding of definitions, constructions, and the application of theorems to original exercises, science, and life situations.

FINDINGS:

1. Low test scores throughout the State indicate need of remedial measures in teaching geometry.
2. Tests are exerting slight influence on classroom teaching.
3. Tests of this type arouse student interest.
4. Many students, especially boys, show more mathematical ability than school marks indicate.

PROJECT XI.

TITLE: How to teach secondary chemistry.

AUTHOR: Hattie D. F. Haub.

NATURE OF STUDY: Fifteen years' observation of later work accomplished, both in the university and in industry, by students who studied high school chemistry showed clearly that the young people trained to work with a conscious object in mind rather than merely to follow laboratory directions were the more successful and interested workers. They could apply their knowledge.

The most helpful teachers were those who eliminated much of the drudgery and busy work, and devoted more energy to teaching the students as individuals.

The above book gives suggestions for teaching chemistry based on these findings.

PROJECT XII.

TITLE: Difficulties of high school pupils in written and oral English as found by case-study methods.

AUTHOR: L. M. Bowman.

SCHOOL INVOLVED: McClymonds High School, Oakland.

NATURE OF STUDY: The problem was to analyze the difficulties in written and oral English of a selected group of high school pupils, using the case-study technique.

FINDINGS:

1. Difficulties appeared in all of the English skills selected for this study, varying from 41% to 79% of the cases studied, depending on the skill under consideration.
2. The number of difficulties averaged 8% greater in oral than in written English.
3. The most prominent causes for the difficulties were:
   a. Indifference of the pupil.
   b. Lack of adequate training of the pupil.
   c. His foreign background.
   d. Lack of cultural background in his home.
4. The case-studies pointed to many causes that could be wholly or partially removed under more ideal teaching conditions than prevailed.
5. They showed the problem of the difficulties to be an individual one.

PROJECT XIII.

TITLE: Lesson assignments of teachers in the Oakland senior high schools.

AUTHOR: Harold D. Aten.

NATURE OF STUDY: This study is an attempt to find (1) the essential qualities of effective assignments, (2) practices in Oakland in assignments, and (3) means of improving assignment techniques.

Student teachers were agents to collect representative, unbiased samplings of regular teachers' assignments, the reliability being checked by tests with type assignments.

One hundred and fifty reports revealed various discrepancies between accepted theory and customary practice on (1) time required to give, (2) time for which given, (3) when given, (4) form, and (5) evidences of five selected criteria.

Standards for lesson assignments were then proposed, with suggestions for effecting their better realization in practice.

PROJECT XIV.

TITLE: Some factors in the prediction of success in practice teaching.

AUTHOR: G. P. Cahoon.

NATURE OF STUDY: In a group of over 500 student teachers from the University of California, no significant relation was found between success in practice teaching and either intelligence test scores or marks in college courses. Evidence that a large percentage of student teachers were rated "above average" on the rating sheets then in use (1928) was also revealed.

Considerable information relative to the needs of beginning teachers and teacher-training problems was indicated by the returns from a follow-up study of former student teachers now teaching in the field.

PROJECT XV.

TITLE: Sheet metal work for trade extension classes.

AUTHOR: Edward H. Smith.

NATURE OF STUDY: The sheet metal industry in Oakland, acting through its representatives on the Advisory Committee for Apprentice Training, has requested the school authorities to assume responsibility for training all its apprentices. Search for suitable material and methods by which to give this training revealed:

1. The need for a course which would provide for a broader technical training than can be found in existing books or courses of study on pattern lay-out in this field of work.
2. The necessity for definite divisions of work and time to assure training in all branches of the trade.
3. The need for a means of recording progress and attainment of the student for the information of employers and persons responsible for proper training.

It is believed this division of work and time will produce:

1. Greater concentration of various branches of the trade at the time assigned them.
2. Increased effort by the student, as he must finish work in one level before passing to the next higher.
3. That it will prevent omission of subject-matter necessary for training in all branches of the trade.

PROJECT XVI.

TITLE: Teaching load and pupil progress in large versus small classes.

AUTHOR: Vibella Martin.

NATURE OF STUDY: What is the teacher's load in a class of 50 pupils in sophomore English when he has the services of a clerk?

The teaching load in a large class increases or decreases in direct proportion to the prevalence of intelligent curiosity, determination, and volitional responsibility of the pupils. Even with the optimum initiative and momentum in a group the load is unusually heavy because the adolescent age level needs personal guidance as well as opportunities for social orientation and daily active participation in group and individual work. Generally, the socially adjusted pupils enjoy and profit more than others from membership in a large class.

COURSE OF STUDY MATERIALS ISSUED DURING THE YEAR 1929-1930

Printed

Opportunity Monograph Series I, No. 1, Auto Repair Trades.
Opportunity Monograph Series II, No. 1, The Fusion Welder in Oakland.
No. 3—Elementary accounting.
No. 4—Printing for Grades 7, 8, 9.
No. 5—Physics for Senior High Schools.
No. 6—Birds Common to Oakland.
No. 10—Auto Mechanics.
No. 11—Vocational Electrical Work.
No. 30—Home Economics, Grades 7, 8, 9.
No. 85—Economic Geography.
No. 126—Penmanship, Grades 7 and 8.
Handbook for Office Training Students.
Oakland—A Story for Children.

Mimeographed

No. 8—Mill Cabinet Making for Vocational Classes.
No. 7—Junior Business Training.
No. 28—Related Drawing for Smith-Hughes Classes.
No. 51—Related Mathematics for Vocational Classes.
No. 112—Salesmanship for Grades 11 and 12.

Preliminary Editions

Tentative Course of Study in General Science for Grades 7, 8 and 9.
Tentative Outline for Use of Barber's Mathematics in L7 Grade.
Tentative Outline of Proposed Course of Study in General Mathematics, Ninth Year.
Preliminary Outline of Proposed Course of Study in Mathematics for Senior High Schools.
Preliminary Outline of Proposed Course of Study in Algebra for L9 Grade.
Tentative Outline of Proposed Course of Study in French for Junior and Senior High Schools.

Tentative Outline of Proposed Course of Study in Spanish for Junior and Senior High Schools.
Tentative Outline of Proposed Course of Study in Latin for Junior and Senior High Schools.
Tentative Outline of Proposed Course of Study in German.

REPORT OF THE PASADENA CITY SCHOOLS

DEPARTMENT OF ADMINISTRATIVE RESEARCH

PROJECT I.

TITLE: How homogeneous is a "homogeneous group"?
(Published in September, 1930, issue of *Nation's Schools.*)

AUTHOR: W. Hardin Hughes, Director of Administrative Research, Pasadena City Schools.

WHERE STUDY WAS MADE: This study was based on data collected in the junior high schools of Pasadena.

PROBLEM AND PROCEDURES: The problem attacked in this study was that of determining the extent to which the students in each of the ability groups in the Pasadena three-track system are homogeneous and of ascertaining the relationship of certain measures of ability and other measures of scholastic achievement. A number of general intelligence tests, standardized achievement tests, both in batteries and in single-subject tests, were used. Fourteen factors which had been taken into account in classification were also considered in the study.

RESULTS: The following facts were revealed:

a. Coefficients of correlation between the quotients derived from two widely used intelligence tests are deceptive as to the actual agreement of their results. Although the correlation (Pearson) between the Terman Group Tests of Mental Ability and the Kuhlmann-Anderson Intelligence Test was found to be .84 for ninth-grade students, the groups would have been very differently classified by the two tests. For example, on the average out of every 100 students in the "enriched curriculum" group according to Terman, 2 according to Kuhlmann-Anderson would have been in the "minimum" group; 34 in the "average" group; and 64 in the "enriched" group. Similar discrepancies were found for each of the ability groups.
b. The relation between I. Q.'s and E. Q.'s was similar. In this case the correlation, .84, was deceptive as to the real relationship. A range of 5 points in I. Q. gave a range of from 30 to 55 in E. Q., and vice versa.
c. It was found that for grouping in reading alone the single factor, I. Q., was a better basis than all of the 14 factors combined.
d. Homogeneity with respect to any factor included in this study was not found.

PROJECT II.

TITLE: Un-scrambling the ingredients of teachers' marks.
(To appear in an early number of the *Nation's Schools.*)

AUTHOR: W. Hardin Hughes, Director of Administrative Research, Pasadena City Schools.

WHERE STUDY WAS MADE: This study was based on data secured in the junior and senior high schools and junior college of Pasadena.

PROBLEM AND PROCEDURES: The problem was that of ascertaining something of the non-scholastic ingredients that actually go into teachers' marks. Data employed in the study included intelligence quotients, general educational quotients, scores from standardized tests both in batteries and in single subjects, teachers' marks for achievement in these subjects, ratings on important qualities of personality, "recommended" and "non-recommended" credits, etc.

RESULTS:

a. The results were not unlike those reported in a similar study carried on by this department several years ago. Almost invariably students who received

failing marks from their teachers but whose achievement, as measured by objective tests, was well within the upper 25% of their fellows, were students whose ratings on certain desirable habits and attitudes were very low. Also, students who received highest marks from their teachers, although their achievement as measured by objective tests would have placed them in the lowest 25% of their fellows, were students whose ratings on certain desirable qualities were very high. The qualities "industry" and "coöperation" seemed most potent factors in teachers' marking.

b. There was an extraordinary amount of over-lapping of achievement (as measured by objective tests) between "recommended" and "non-recommended" groups in the junior college.

c. In answer to the question "How can the situation be improved?" we should say: Have a mark which stands definitely for scholastic achievement, but have other marks which stand just as definitely for the possession of desirable human qualities. The cumulative records of students should contain both. Let us keep apart the things that are different and thereby avoid unnecessary confusion. Heterogeneous ingredients, when scrambled, can be unscrambled with the greatest difficulty, if indeed the separation may be achieved by any known means.

PROJECT III.

TITLE: Survey of Pasadena city schools.

AUTHORS: This is a coöperative project carried on by a survey staff composed as follows:

Mr. Harold A. Stone, California Taxpayers' Association, Chairman.
Dr. Osman R. Hull, University of Southern California.
Dr. Willis S. Ford, University of Southern California.
Dr. F. W. Hart, University of California.
Dr. W. Hardin Hughes, Bureau of Administrative Research, Pasadena.

The plan of the report was approved and the completed report will be reviewed by the Educational Commission of the California Taxpayers Association.

REPORT OF PIEDMONT SCHOOLS

LAWRENCE BOLENBAUGH, *Director of the Department of Research*

PROJECT

TITLE: Failures and college recommendations as affected by a modified ability grouping.

PERSON RESPONSIBLE: Lawrence Bolenbaugh.

WHERE CARRIED OUT: Through grades VII-XII of the Piedmont schools.

NATURE OF STUDY: A presentation of the results of an extensive testing program as applied to the problem of reducing failures within the school and of recommending students for university.

FINDINGS: Modified grouping, with teachers aware of the I. Q. range of each group, have proved effective in the reduction of failures; percentage of recommended grades given has steadily increased, and students having entered the university show an increasing tendency to rank above the lower third of their group.

REPORT OF SAN FRANCISCO PUBLIC SCHOOLS

ROBERT FLOYD GRAY, *Director of the Department of Educational Research and Service*

PROJECT I.

TITLE: Program problems and practice in senior high schools of San Francisco.

PERSON RESPONSIBLE: Richard I. Abraham.

NATURE OF STUDY: During the fall term, 1929, a study of teacher-load in all the senior high schools of San Francisco was made. The primary objectives of this investigation were:

a. To determine the median instructional load of senior high school teachers.
b. To furnish a basis upon which comparisons could be made among the several schools and departments.

FINDINGS:

a. Distribution of pupils and teachers by departments and schools. It was found that approximately 20% of the work done by the San Francisco senior high school pupils is in the English subject group; about 14% is in the social science group; 10% is in the mathematics group; 12% is in the modern language group; 10% is in the science group; and 2% is in the Latin group. Thus, for all the schools combined, about two-thirds of the work done is in the group of academic subjects, leaving about one-third of the work in the so-called non-academic group, and distributed as follows:

16% in the commercial group.
3% in the industrial arts group.
3% in the household arts group.
4% in the fine arts group.
3% in the mechanical drawing group.
3% in the music group.

In the totals for all schools, the English and commercial subject groups have the highest percentages, with 19.6% and 15.9%, respectively, while mechanical drawing and Latin have the lowest percentages with 2.8% and 2.0%, respectively.

b. The average number of pupils per class by departments was found to be as follows:

Department	*Average Number of Pupils per Class*	*Range in Average Class Size*
Physical Education	42.1	35.4 to 49.0
Commerce	33.1	31.0 to 35.2
Social Science	32.4	27.0 to 35.9
Mathematics	31.2	28.9 to 34.1
Music	30.5	25.5 to 37.5
English	30.1	26.1 to 33.9
Modern Language	27.9	22.5 to 32.3
Science	24.9	22.0 to 26.5
Latin	23.5	18.6 to 28.9
Fine Arts	22.8	18.6 to 28.4
Household Arts	22.4	17.3 to 26.3
Mechanical Drawing	21.8	17.6 to 26.6
Industrial Arts	21.2	19.7 to 24.0

c. Teacher-load by schools and by departments.

The range of teacher-loads by schools was found to be from 257 at Polytechnic High School to 1170 pupil clock hours* at Mission High School. The median was 598. The range of the medians of the seven schools was from 554 at Lowell High School to 645 at High School of Commerce.

The median for all departments was 598 pupil clock hours. The range of the medians by departments was from 478 in Fine Arts to 825 in Physical Education. The upper quartile for all departments was 671, ranging from 987 in Physical Education to 541 in Fine Arts. The lower quartile for all departments was 519, ranging from 679 in Physical Education to 394 in both Mechanical Drawing and Household Arts.

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*The standard used in this study was "pupil-clock-hours per week." One "pupil-clock-hour" is defined as sixty minutes of class work for one pupil. Thus there is represented in a class of 30 pupils during one fifty-minute period a total of 25 pupil-clock-hours. The total instructional load per week for an individual teacher is the sum of the pupil-clock-hours represented in all the teaching periods of this teacher during the week.

PROJECT II.

TITLE: Acceleration and retardation—San Francisco public schools. A comparison of 1929-1930 with 1928-1929.

PERSON RESPONSIBLE: Richard I. Abraham.

WHERE CARRIED OUT: All schools and grades, San Francisco public schools.

NATURE OF PROJECT: The distribution of public school pupils on an age-grade basis for 1929-1930 was compared with that for 1928-1929.

FINDINGS:

1. In general, the status of the total regular school population of this year is better with respect to retardation than that of last year. While there is a smaller per cent of acceleration this year than last year, there is also an increase in per cent of pupils at grade, and a decrease in pupils retarded. Although the percentages of increase and decrease are small, the number of pupils represented by the percentages is fairly large.
2. In elementary schools the same condition pertains, namely, an increase in the per cent of pupils who are either accelerated or at grade, and a smaller per cent of pupils retarded.
3. In junior high schools the condition is still better, namely, increases in percentage of pupils accelerated and pupils at grade, and a decrease in per cent of pupils retarded.
4. Senior high schools have made a poorer showing than elementary or junior high schools. The per cent of pupils accelerated and at grade is less than last year, while the per cent of pupils retarded is greater than last year.
5. The greatest loss appears in grades nine and ten, where the increases in retardation range as high as 4.12%. A large increase in retardation is also found in the low third grade, where it reaches 2.69%.
6. The greatest decreases in per cent of retardation are found in low and high eighth grades, where the decreases are 3.92% and 3.57%, respectively.

PROJECT III.

TITLE: Survey of Gough School (school for the deaf and deafened).

PERSON RESPONSIBLE: Richard I. Abraham.

NATURE OF STUDY: The objective in this study was the reorganization of the school for deaf and deafened children. Current practice in twenty-five cities relative to the organization of education for the deaf and deafened was investigated.

FINDINGS: One of the important results of the study was the establishment of a class in a new junior high school for deaf and hard-of-hearing children who have completed the work of grades one-six, inclusive. The pupils of this class will undertake the regular course of study, assisted by a teacher specially trained in educating deaf and hard-of-hearing children.

PROJECT IV.

TITLE: Distribution of high school pupils' residences.

PERSON RESPONSIBLE: Ivan R. Waterman.

NATURE OF STUDY: A spot map showing the location of each high school pupil in San Francisco (except continuation school) was made.

FINDINGS:

1. Nearly all pupils living in the vicinity of a cosmopolitan type high school attend the school nearest their home.
2. The majority of pupils living nearest a specialized school attend that school; however, a large minority attend other high schools. The pupils of Girls' High School are more widely distributed throughout the city than in the case with pupils of other schools.
3. A comparison of the locations of ninth grade pupils with those of pupils in grades ten-twelve reveals a slight tendency for more pupils to attend the high school nearest their home.
4. The data of this study are fundamental to a study of location and size of future high school buildings.

PROJECT V.

TITLE: Higher institutions attended by recommended and partially recommended San Francisco high school graduates of 1928-1929.

PERSON RESPONSIBLE: C. E. Purviance.

NATURE OF STUDY: Part II of the High School Principals' Annual Reports showing the higher institutions attended by high school graduates were summarized.

FINDINGS:

1. There were 2285 high school graduates during the school year 1928-1929, of whom 728, or 32%, entered higher institutions.
2. Fifty-eight per cent of the 728 graduates entering higher institutions were fully recommended.
3. Forty-four per cent of those entering higher institutions entered the University of California, 18% entered San Mateo Junior College, and 9% entered Stanford University. The remaining 29% entered various public and private institutions of higher learning.

PROJECT VI

TITLE: Ten years of progress in the San Francisco public schools.

PERSONS RESPONSIBLE: R. F. Gray, R. I. Abraham, Lillie Lewin, C. E. Purviance, I. R. Waterman.

NATURE OF PROJECT: A study of the development which has taken place in the San Francisco public schools during the past decade. The following topics are included in the study:

1. The school building program.
2. Growth and development of the high schools.
3. The junior high school program.
4. The kindergarten-primary division. The activity program.
5. Special schools and classes.
6. Evening schools.
7. Tests and measurements in the educational program.
8. Growth of school attendance during the past decade.
9. The program of physical education.
10. Continuation education.
11. Administration and organization.

PROJECT VII.

TITLE: Inquiry into need for revising high school course of study.

PERSON RESPONSIBLE: Robert Floyd Gray.

NATURE OF STUDY: Information blanks consisting of items concerning the adequacy of the present high school courses of study were sent to all high school teachers. Certain of the items are reproduced below.

Does the course of study meet the needs of the several ability groups?
Are you able to cover the course in the time allotted?
Does the course have sufficient review materials?
Have suitable supplementary materials been provided?

FINDINGS: In view of the replies received, the following conclusions seem justified.

1. Certain of the courses should be revised with a view to differentiated materials for the several ability groups.
2. Certain courses need more review material.
3. Additional supplementary materials should be provided in connection with certain courses.
4. The results of the study provide definite and valuable suggestions for revision of the present high school course of study.

PROJECT VIII.

TITLE: Selection of reading materials for "Z" groups in junior high school.

PERSONS RESPONSIBLE: Robert Floyd Gray, Lillie Lewin, et al.

NATURE OF STUDY: "Z" pupils were roughly defined as those pupils whose age is approximately one year below the median reading age of pupils of their grade.

This portion included about one-fourth of the total number, the proportion of pupils falling in this group varying from school to school.

A score card for rating reading materials was drawn up which consisted of the following three main divisions:

a. Mechanical features 10%
b. Interest level 45%
c. Reading difficulty 45%

Each division contained several sub-items.

Reading materials submitted by the leading publishers were rated by a committee of junior high school English teachers.

PROJECT IX.

TITLE: Teaching load in San Francisco junior high schools, spring semester, 1929-30.

PERSON RESPONSIBLE: Ivan R. Waterman.

NATURE OF STUDY: The teaching loads in the junior high schools on the bases of (a) number of periods taught per week, and (b) number of pupil periods per week, were tabulated for each junior high school teacher. Averages for subjects and for schools were computed.

FINDINGS:

1. The average teaching load in San Francisco junior high schools was:
   a. Periods per week (55 minute periods), 24.9.
   b. Pupil periods per week:
      1. Academic Teachers 869
      2. Industrial Arts, Domestic Arts, and Art 524
      3. Music 885
      4. Physical Education 851
2. In terms of periods taught per week, the teacher load in large junior high schools is approximately the same as in small junior high schools.
3. In terms of pupil periods per week, the teacher load in large junior high schools is greater than in small junior high schools.
4. There is a wide range in teacher loads in each subject in each school, whether periods per week or pupil periods per week is the criterion.

PROJECT X.

TITLE: Mental ability of high eighth grade pupils.

PERSON RESPONSIBLE: Lillie Lewin.

NATURE OF STUDY: As a means of facilitating the classification of pupils entering high school, the Terman Group Test of Mental Ability is administered to all pupils leaving the high eighth grade of the San Francisco public schools each term. The following statements of ability are based on the results of the Terman Test administered May, 1930, to 1606 pupils distributed throughout the city in twenty-nine elementary schools.

FINDINGS:

1. This survey of the mental ability of high eighth grade pupils shows not only a pronounced variability through sections of the city but a wide range of abilties within individual schools. With the city median for the end of the high eighth grade at 14 years 3 months, some schools have median mental ages as low as 13 years 3 months, while some exceed 15 years. A range of two years exists between the median abilities of the lowest and highest eighth grades of the elementary schools.
2. Looking at the picture from the point of view of individual pupils, one-quarter fails to reach a mental ability of 13 years 3 months, while one-quarter exceeds a mental ability of 15 years 5 months. The median ability of the 1606 pupils tested is 14 years 3 months.
3. This wide range of abilities further justifies the rapidly growing junior high school organization which can provide more highly differentiated instruction at an earlier age. Approximately one-half the eighth grades of the city are now in junior high schools and each new term provides junior high school opportunities for a greater number.

PROJECT XI.

TITLE: Size of high school classes, fall semester, 1929-1930.

PERSON RESPONSIBLE: Ivan R. Waterman.

NATURE OF PROJECT: The classes of each high school were tabulated according to subject and size of class. The average size of class in the different subjects and several schools were compared.

FINDINGS:

1. The average size of class in the various subjects for all schools combined was as follows:

Social Studies	32.0
Mathematics	31.0
English	30.0
Languages	26.9
Total academic	29.7
Physical Education (boys)	43.7
Physical Education (girls)	42.2
Commercial	33.3
Music	28.0
Science	26.2
Hygiene	25.5
Art	22.8
Household Arts	22.1
Mechanical Drawing	21.8
Industrial Arts	21.1
Printing	6.5
All classes	29.8

2. There is a marked variance between the average class sizes in most subjects among the several schools.
3. The class sizes in a given school and given subject distribute themselves over a very wide range.

PROJECT XII.

TITLE: Utilization of San Francisco high school buildings.

PERSON RESPONSIBLE: Ivan R. Waterman.

NATURE OF PROJECT: The utilization of instructional rooms in San Francisco high schools was computed upon three bases:

a. The per cent of time that rooms are utilized.
b. The per cent of pupil stations utilized.
c. The per cent of "standard pupil accommodations" utilized.

("Standard pupil accommodations" refers to the number of pupil stations that could be provided on the basis of standard space requirements.)

FINDINGS:

1. In five of the seven high schools more instructional rooms have been provided than can be efficiently utilized with the present school enrollment.
2. In all of the schools the degree of utilization as determined by the second measure is far below that determined by the first measure; in other words, more pupil stations are provided than can be efficiently utilized.
3. The degree of utilization as determined by the third measure is less than that found by the second measure in most types of rooms. This means that in the majority of instances fewer pupil stations have been provided per room than standard space requirements dictate.
4. The two previous conclusions lead to the further conclusion that many of the instructional rooms are too large to permit efficient utilization.
5. The data of this investigation are basic to a study of the number of each type of room needed in a new senior high school plant for San Francisco which is contemplated in the immediate future. Such a study is now in progress.

PROJECT XIII.

TITLE: Size of junior high school classes, fall semester, 1929-1930.

PERSON RESPONSIBLE: Ivan R. Waterman.

NATURE OF PROJECT: The class sizes in each subject (Physical Education excluded), in each junior high school were tabulated and averages computed. Comparisons were made between the average size of class in the several subjects among the different schools.

FINDINGS:

1. The average size of class in the various subjects for all junior high schools combined was as follows:

Music	38.2
General Science	37.9
Social Studies	37.3
Mathematics	36.4
English	35.0
Commercial	31.9
Languages	31.6
Art	21.7
Industrial Arts	21.4
Household Arts	21.2
All classes	30.7

2. The average size of class in the large junior high school is much greater than in the small junior high school.
3. The class sizes in each subject in each school are distributed over a very wide range.

REPORT OF SANTA MONICA SECONDARY SCHOOLS

J. HAROLD WILLIAMS, *Director, Department of Research*

PROJECT I.

TITLE: Survey of musical accomplishment.

PERSONS RESPONSIBLE: Research staff working with Mrs. Irene Holliday and Mrs. Claire Armstrong, junior high school music teachers.

WHERE CARRIED OUT: The study was made in the 7B grade.

NATURE OF THE PROJECT: The study was to determine the level of accomplishment of pupils entering the junior high schools before they had undertaken the regular course in music.

PROJECT II.

TITLE: Preliminary classification survey.

PERSONS RESPONSIBLE: Research staff.

SCHOOLS INVOLVED: Elementary schools, junior and senior high schools.

NATURE OF PROJECT: This study was made in October, 1929, and included (a) a study of age-grade distribution, yielding facts concerning retardation and acceleration; (b) race distribution; (c) a study of newly entering pupils. Such a study is made at the beginning of each school year.

PROJECT III.

TITLE: High school marks for term ending June, 1929.

PERSONS RESPONSIBLE: Research staff.

WHERE CARRIED OUT: Santa Monica High School—all grades.

NATURE OF PROJECT: A distribution of teachers' marks was made at the close of the second semester ending June, 1929, showing existing tendencies in the assignment of marks in the various departments. The distribution was prepared to show what changes were taking place in the high school and to afford a comparison with school marks given in previous terms.

PROJECT IV.

TITLE: Pupil failures in junior and senior high schools.
PERSONS RESPONSIBLE: Research Staff.
SCHOOLS INVOLVED: Junior and senior high schools.
NATURE OF PROJECT: This study dealt with the causes and extent of failure in the high schools as regularly reported by the teachers. The report contained: (a) distribution of failures according to reason given; (b) distribution of failure according to I. Q. and subject in which failure occurred; (c) distribution of failure according to grade and department.

PROJECT V.

TITLE: Teacher load.
PERSON RESPONSIBLE: Director of Research.
SCHOOLS INVOLVED: Elementary schools, junior and senior high schools.
NATURE OF PROJECT: A study of the number of pupils per teacher assigned to each school.

PROJECT VI.

TITLE: Diagnostic tests in harmony.
PERSON RESPONSIBLE: Doris Moon, chairman, high school music committee.
WHERE CARRIED OUT: Santa Monica High School.
NATURE OF PROJECT: A series of diagnostic tests in the field of harmony. The tests were worked out and used in experimental form in the Santa Monica High School.

These tests are now published in two forms and available for use through the publishers of the Alchin Music Texts.

PROJECT VII.

TITLE: New Stanford Achievement Survey.
PERSONS RESPONSIBLE: Research staff.
WHERE CARRIED OUT: Grades 3a, 5a, 7b.
NATURE OF PROJECT: This survey was given at the close of the first semester. The findings of the survey were favorable as indicated by the fact that the medians of most grades exceeded the norms.

PROJECT VIII.

TITLE: Pupil failures.
PERSONS RESPONSIBLE: Research staff.
WHERE CARRIED OUT: All elementary, junior and senior high schools.
NATURE OF PROJECT: This was a general study of the extent and causes of failure. It included 24 pages of graphs and tabular data showing the conditions in each school.

PROJECT IX.

TITLE: A study of high school marks.
PERSONS RESPONSIBLE: Research staff.
WHERE CARRIED OUT: All junior and senior high schools.
NATURE OF PROJECT: A series of end-term studies of teachers' marks, showing the number and per cent of marks given in each department. The senior high school report showed the per cent of grades given in each department over a period of five semesters.

PROJECT X.

TITLE: End-semester tests given in the senior high school.
PERSON RESPONSIBLE: Charlotte B. Suits, High School Counselor.
WHERE CARRIED OUT: Santa Monica High School.
NATURE OF PROJECT: Contained reports of the following tests:

Biology—

Ruch-Cossman Biology Test, Form A.

Given to pupils completing two semesters of Biology.

Geometry—
Schorling Sanford Plane Geometry Test, Form B.
Given to pupils completing two semesters of Geometry.
History—
Columbia Research Bureau American History Test, Forms A and B.
Given to pupils completing two semesters of U. S. History.
Gregory-Owens Test in Mediæval and Modern History, Form A.
Given to pupils completing two semesters of Modern History.
Departmental Civics Test, Forms A and B.
Given to pupils completing one semester of Civics.
Pressey-Richards Understanding of American History.
Given to pupils completing two semesters of U. S. History.
Latin—
Godsey Latin Composition, Test A.
Given to pupils completing four, five, and seven semesters of Latin.
Stevenson-Coxe Latin Derivative, Form 1.
Given to pupils completing three, four, and five semesters of Latin.
Tyler-Pressey Latin Verb Test, Form 1.
Given to pupils completing three and five semesters of Latin.

PROJECT XI.

TITLE: End-semester tests given in the junior high schools.
PERSON RESPONSIBLE: Mrs. Una R. Kirk, Counselor, John Adams Junior High School.
WHERE CARRIED OUT: All grades in junior high school.
NATURE OF PROJECT: Contained reports of following tests:
Algebra—
Columbia Research Bureau Test, Test I, Form B.
Given in grade 9b.
Douglass Algebra Test, Series B, Form 1, Tests V, VI, and VII.
Given in grade 9a.
Biology—
Ruch-Cossman Biology Test, Form A.
Given in grade 9a.
History—
Gregory Test in American History, Test I, Form A, Revised.
Given in grade 7b.
Gregory Test in American History, Test II, Form A, Revised.
Given in grade 8a.
Latin—
Tyler-Pressey Latin Verb Forms.
Given in grade 9a.
White Latin Test, Form A.
Given in grade 9a.

PROJECT XII.

TITLE: Report of Pressey Diagnostic English Tests.
PERSONS RESPONSIBLE: Research staff.
WHERE CARRIED OUT: Grades 8b and 8a.
NATURE OF PROJECT: These tests have been designed by their author to give the teacher detailed diagnostic information as to each pupil's knowledge of some phase of composition writing. All four tests were given: (a) Capitalization; (b) Punctuation; (c) Grammar, and (d) Sentence Structure. According to the results of this test we are somewhat below standard in English Composition.

PROJECT XIII.

TITLE: Stenquist Mechanical Aptitude Tests.
PERSONS RESPONSIBLE: Research staff.
WHERE CARRIED OUT: Grade 7.

NATURE OF PROJECT: These tests were given to all boys of the seventh grade. The main purpose in giving the tests was to make possible more effective educational and vocational guidance for boys in the seventh grade.

PROJECT XIV.

TITLE: Terman Group Intelligence Survey.
PERSONS RESPONSIBLE: Research staff.
WHERE CARRIED OUT: Grade 6a.
NATURE OF PROJECT: The Terman Group Intelligence Test of Mental Ability was given at the close of each term to all the pupils of the 6a grade preparatory to their entrance into junior high school. The following information was gathered: chronological age, mental age, I. Q., and Terman Test score.

RESEARCH PROJECTS UNDER WAY IN THE PASADENA JUNIOR COLLEGE DURING THE YEAR 1929-30

PROJECT I.

TITLE: The comparison of a D-11-1 section of pupils in English with a C-11-1 section during the spring semester of 1930.
PERSON RESPONSIBLE: Miss Elsie Sawyer of the English department faculty.
DEPARTMENT: Study carried out in the eleventh grade in the Pasadena Junior College.
NATURE OF PROJECT: Miss Sawyer conducted two sections: one recommended, designated as C-11-1, and the other non-recommended, designated as D-11-1, in English composition. The "C" class had an enrollment of 35 pupils, the "D" class of 31. The students were classified on the basis of their classification in the junior high schools and the judgments of the junior high school English teachers and the counselors. The study consisted in determining the relative ability of the two groups as determined by mental tests, a study of their work habits, and attendance records, and the progress made in the respective classes.
FINDINGS AND OUTCOME:

a. The average age of the "D" group is five months greater than that of the "C" group.
b. The average intelligence quotient of the "D" section was 96.4 and of the "C" section 117.1.
c. The average number of absences from class was 3.7 for the "D" section and 1.7 for the "C" section.
d. The reading comprehension of the "C" section was approximately six points above that of the "D" section, on a scale of 100 points.
e. In every comparison of the study there was extensive overlapping between the two groups.

PROJECT II.

TITLE: A critical analysis of the factors predicative of success in the junior college.
PERSON RESPONSIBLE: Mr. H. I. Weitzel of the science faculty of the Pasadena Junior College.
DEPARTMENT: The study is under way at the present time, and covers the thirteenth and fourteenth grades in all departments.
NATURE AND FINDINGS: While the study is not completed at the present time, Mr. Weitzel is gathering extensive data regarding the classification of students and educational methods on the upper secondary school level. The findings and outcome will be available during the latter part of the year 1930-31.

PROJECT III.

TITLE: A study of student organizations in the secondary schools of America.
PERSON RESPONSIBLE: Miss Maude L. Oliver of the English faculty of the Pasadena Junior College.
NATURE AND FINDINGS: The study was based on a questionnaire which was mailed to representative secondary schools throughout the United States. In this study

Miss Oliver has made summaries of the types of organizations in the various high schools, the aims and objectives, the method and administration of extra-curricular activities as conducted through student organizations, and has developed a series of standards for evaluating practices in student organizations in American high schools.

PROJECT IV.

TITLE: The organization and administration of curricula in California public junior colleges.

PERSON RESPONSIBLE: Mr. James P. O'Mara, Dean of Men of the Pasadena Junior College.

DEPARTMENT: Study carried out on the junior college level.

NATURE AND FINDINGS: A study of the curricula and practices in the junior colleges, as well as the organization of the college. The procedure carried out is a combination of the questionnaire and library procedure. The findings and outcomes of this study will be available during the latter part of the year 1930-31.

PROJECT V.

TITLE: An examination of the records of the graduates of the Pasadena Junior College in standard colleges and universities.

PERSON RESPONSIBLE: Mr. John A. Anderson, Dean of Records of the Pasadena Junior College.

NATURE AND FINDINGS: Mr. Anderson examined the reports of 259 graduates of the Pasadena Junior College in attendance at twenty-four standard colleges and universities. The study involved a tabulation of grade-point ratios and a distribution of the school marks on a percentage basis. He found that 21% of the 259 students had grades of A and A—, 49% received grades of B and B—, 26% of grades of C and D, 2% withdrew, and 2% failed.

PROJECT VI.

TITLE: An evaluation of certificate and diploma classification of students on the junior college level.

PERSON RESPONSIBLE: Mr. John W. Harbeson, Principal of the Pasadena Junior College.

NATURE AND FINDINGS: The study consisted of a comparison of approximately four hundred fully recommended and four hundred non-recommended students enrolled in the Pasadena Junior College. The comparisons of the two groups were made under the following main headings:

a. The social backgrounds of the two groups.
b. The economic backgrounds and the vocational interests.
c. The high school records, involving extent of study in the various subjects and the average marks.
d. The same data for the college record.
e. A study of the two groups on the basis of trait ratings as rated by themselves, their teachers, and their parents.
f. A comparative study of the two groups on the basis of a battery of twelve standardized educational and psychological tests. In addition to this comparison of the two groups, a study was made of the marginal group of non-recommended students, those falling short of recommended status by not over three units. A comparison of this group was made with each of the two major groups on college record, trait ratings and standardized tests. The third portion of the study consisted of a study of the students who had been transferred from the Diploma to the Certificate Group after having demonstrated their ability to do college work successfully in the Diploma course. This group was compared with the two major groups on the bases of college academic records, trait ratings, and standardized tests. The fourth section of the study involved a study of the eight hundred students involved in the investigation as classified into recommended and non-recommended groups according to the plan of

the University of California to take effect August, 1931. A comparison of the Certificate and Diploma Groups under this plan was made with the Certificate and Diploma Groups as classified under the old plan. The final section consisted of a general summary of the findings, a bibliography, and a list of problems for further study.

The most important finding of the study was the fact of the extensive overlapping existing between the "C" and "D" groups. On the basis of every comparison made from 20% to 45% of the Diploma students equalled or exceeded the median of the fully recommended group, and conversely the same percentages of Certificate students fell below the median mark of the Diploma Group. In other words, it is impossible to classify all high school graduates into Certificate and Diploma Groups without doing injustice to large percentages of students. The general average of the Certificate Group is appreciably higher than that of the Diploma Group, but the two groups merge into each other so gradually and imperceptibly that it would be impossible to draw a hard and fast line between them.

PROJECT VII.

The following projects are being carried on on an experimental basis by the Administration Staff and Faculty of the Pasadena Junior College under authorization of Superintendent John A. Sexson and the Board of Education.

1. The unification of the eleventh to fourteenth years, inclusive, into one organization administered on the junior college basis. In this experiment the eleventh grade, as the freshman year in practically all four-year institutions, is administered as an adjustment year. In the eleventh grade many practices of the traditional high school are carried over. The twelfth grade, however, along with the thirteenth and fourteenth, live under the same rules and regulations, and these are of an accepted junior college standard.

   In order to break down the hard and fast boundary line existing between the twelfth and thirteenth grades, a provision has been made for the same integration and coöperation between the twelfth and the thirteenth grades as has already prevailed between the eleventh and twelfth and between the thirteenth and fourteenth. In other words, the Pasadena Junior College, operating under the six-four-four plan of school organization, does not recognize the twelfth grade as a logical stopping place in secondary school organization. Instead, it is the sophomore year of the four-year unit and there is the same interplay between the sophomore and junior years in the Pasadena Junior College as would be found in the sophomore and junior years of any four-year educational unit. To carry out this general provision the following general principles have been worked out and will go into effect with the school year 1930-31:

   a. Units earned by students in the eleventh and twelfth grades are to be expressed in the same terms as those used to designate college courses.
   b. The requirements for graduation shall be the completion of 128 units of work to be completed in grades eleven to fourteen, inclusive, 64 in the lower division and 64 in the upper division. Physical education is to be counted as one unit per semester and is to meet three times per week, excepting in grade eleven when it shall meet five periods per week.
   c. Courses shall be administered in the eleventh and twelfth grades on the same basis as courses in the thirteenth and fourteenth grades are administered. This means that a number of courses in the eleventh and twelfth grades will meet but three times per week.
   d. Fifteen units of credit, in addition to physical education, shall constitute a standard program.
   e. The curriculum of the entire four years shall be administered from the eleventh to the fourteenth, inclusive, as a unit—the eleventh year being considered, however, as an adjustment period.
   f. Since there is no hard and fast boundary line separating the twelfth from the thirteenth years, the twelfth year students shall be allowed to

elect courses from the thirteenth year with the approval of the chairman of the department, the Counselor and the Dean of Personnel.

g. The thirteenth and fourteenth year students may elect courses from the lower division with the approval of the chairman of the department, the Counselor and the Dean of Personnel, such courses to be counted for credit exactly the same as upper division courses provided that not more than twelve such units be counted toward the Junior Certificate.

2. The Pasadena Junior College will, with the year 1930-31, abandon its policy of classifying all students as Certificate and Diploma, respectively. Instead, students will be classified as to subject. Each subject in the catalog for the year 1930-31 states specifically the subject-matter as well as quality of work prerequisite for the pursuance of that study. This means a classification of subjects rather than a classification of students. A student who can qualify for a course on the upper level is permitted to do so regardless of his record in other subjects. On the other hand, a student whose record is unsatisfactory in a given subject is not permitted to pursue advanced work in the same subject on the upper level. Counselors are finding in working out the study lists with students for the coming year that a classification on this basis is entirely feasible and is more easily administered than the old iron-clad Certificate and Diploma classification as a blanket provision for the entire curriculum. Many problems are anticipated, but it is felt that the general features of the plan are right, and all will reach an ultimate and satisfactory solution.

3. An agreement has been made between the Pasadena Junior College and the Pasadena Hospital for the entire course in nurse training to be administered as a part of the Pasadena Junior College. Previously but one semester of the two years' course has been given at the Pasadena Junior College. Under the new arrangement the entire School of Nursing in connection with the Pasadena Hospital will be administered under the supervision of the Junior College authorities, with the instructors regular members of the Junior College faculty.

4. A complete reorganization of the mechanic arts program of the Pasadena Junior College is under way in the Pasadena Junior College. A committee, of which Mr. Bailey W. Howard, chairman of the Physical Science Department, is chairman, is making a thorough investigation of the practices in other institutions and of the needs of the local community. Under the new plan the courses in manual training and other mechanical work on the junior high school and traditional high school level will be discontinued, and terminal technical courses will be established as well as the regular freshman and sophomore courses of standard schools of engineering. It is expected that out of the new organization will grow a more extensive coöperation between the Science, Mathematics and Mechanical Departments of the Junior College.

GRADUATE DEGREES, WITH MAJOR FIELD IN EDUCATION, GIVEN DURING THE ACADEMIC YEAR 1929-1930

Assembled for the Committee on Educational Research Activities by
FRANK C. TOUTON, *Chairman*

This list is published in THE QUARTERLY *for the purpose of revealing to the profession the problems in education studied and reported on by graduate students in the colleges and universities of California.*

AT THE UNIVERSITY OF CALIFORNIA

The Degree of Doctor of Philosophy

INA HILL BRINKMEIER
Thesis: A study in the technique of constructing objective examinations.

JOHN EDWARD SEYFRIED
Thesis: The contractual status of California city school superintendents.

FERDINAND JAMES TAYLOR
Thesis: Trends in the non-academic courses and curricula of the public junior colleges.

IVAN RUSSELL WATERMAN
Thesis: Equalization of the burden of support for education.

The Degree of Doctor of Education

ELIZABETH LOUISE BISHOP
Thesis: The determination of data needed in the construction of a course in growth and development of the child.

PERCY ROLAND DAVIS
Thesis: State publication of textbooks in California.

EUGENE HILTON
Thesis: Determination of books for collateral reading required in basic junior college courses.

The Degree of Master of Arts

CARL ANTHONY ANDERSON
Thesis: An educational index for the provincial school systems in Canada.

FLORENCE OLIVE AUSTIN
Thesis: The history of the curriculum of the University of California Medical School.

HAZEL PYE BINKLEY
Thesis: A study of the voluntary reading of high school students.

LILLIE MYRTLE BOWMAN
Thesis: Difficulties of high school pupils in written and oral English, as found by case-study methods.

HARRIET LOOMIS BROMLEY
Thesis: The selective tendency in public secondary education as exemplified in the University High School.

PAUL RAY BULLOCK
Thesis: Determination of a procedure by which to construct a general curriculum for a selected high school.

WILLIAM JOHN BURKHARD
Thesis: Accuracy of prediction of school population.

JOHN PEARCE BURNSIDE
Thesis: The accomplishment scores of repeaters.

TENE CAMPBELL CAMERON
Thesis: Improving a county reading program.

PEARL IDA CASTILE
Thesis: Contribution to the education of nurses from a study of normal children.

ETHEL M. COBB
Thesis: The legal and administrative aspects of standardized dress regulations for high school girls.

SARAH FRANCES DAVIS
Thesis: A study of a group of habitually tardy pupils at University High School.

VIRGINIA JUDY ESTERLY
Thesis: The higher education of women in Denmark.

GROVER ALLEN GATES
Thesis: A study of average daily absence in the public schools of Fresno, California.

GEORGE HIRAM GEYER
Thesis: The function of the home room in the Oakland junior high schools.

CELIA ALLEN GIFFORD
Thesis: An evaluation of six primary reading tests.

NELLIE HAMILTON
Thesis: Curriculum adjustment to pupil ability in the first grade, with special reference to immature groups.

ISABELLA STEWART HAMMACK
Thesis: Techniques of nursery school observation.

STANFORD HANNAH
Thesis: Vocational guidance in the small high schools of California, with particular reference to the Mendocino Union High School.

CLARA N. HARGIS
Thesis: A preliminary study of certain factors of environment and traits of structure and function common to children who are not making normal progress in the first and second grades.

H. THURSTON HATCH
Thesis: A study of word frequency in American history textbooks.

HARVEY JULIUS HOLT
Thesis: The metric versus the English system of measurement in the teaching of arithmetic.

GEORGIA HANNAH HOOD
Thesis: Investigation of the physical examination records of a group of college students, as high school freshmen and as college freshmen.

KATHLEEN MARIE JORDAN
Thesis: Tenth grade course of study in literature for low, average and superior groups.

GEORGE MAX KLINGNER
Thesis: Part-time education as a factor in the upgrading of minor employees.

MARY THOMAS MCCURLEY
Thesis: A five-year study of the occupational distribution of the class of 1922 of Goucher College.

ALBERTA MCNEELY
Thesis: A study of the status and difficulties of homogeneous grouping of physical education classes for high school girls in California.

PRESTON BAXTER MAUGHAN
Thesis: The effect of delayed entrance on success in college.

HENRY WILLIAM MEYER
Thesis: The effect of position of printed response words upon children's answers to questions in two-response types of tests.

STANTON HERBERT MEYER
Thesis: An evaluation of certain standard tests in high school physics.

GEORGE DOUGLAS MINER
Thesis: Response validation in multiple-response examinations.
CHARLES ERNEST OVERMAN
Thesis: Holding power of the junior and four-year high schools of San Francisco.
FRED BLAIR PARKER
Thesis: A course of study in twelfth grade English, as determined by the use of functional analysis.
ELBA WILLIAMS ROGERS
Thesis: The relation of the permanency of the employment of continuation school pupils to curriculum construction in the Berkeley continuation school.
RUSSEL MUSSEY SANFORD
Thesis: The use of school auditoriums.
IRENE SAUBLE
Thesis: The effect of time allotment upon achievement in arithmetic in the second grade.
MAY SEBRING
Thesis: Health expenditures for public school teachers as a factor in salary schedules.
THAD WALKER STEVENS
Thesis: The administration of atypical classes in the schools of Oakland, California.
JOHN RICHARD SUTTON
Thesis: A study of disciplinary procedure.
GRANVILLE EDWARD THOMAS
Thesis: Corrective physical education in the State of California.
HELEN LUCILLE WIRT
Thesis: The office of the dean of girls in the senior high schools of California.

The Degree of Master of Science

ELRA GELL GARRISON
Thesis: The agricultural teaching in the Hemet and San Jacinto union high school districts, California.

AT CLAREMONT COLLEGES

The Degree of Master of Arts

MARIAN WENDELN CAMPBELL
Thesis: The effect of the broken home upon the child in school.
ALMA BERDINA CASSEL
Thesis: The overlapping in high school and college literature courses.

AT OCCIDENTAL COLLEGE

The Degree of Master of Arts

MARY BARBARA TAYLOR
Thesis: Honor courses in colleges and universities.

AT THE UNIVERSITY OF SOUTHERN CALIFORNIA

The Degree of Doctor of Philosophy

ETHEL PERCY ANDRUS
Dissertation: The development of an educational program for the high school girl based on a critical study of her nature and her needs.
MERRITT MOORE THOMPSON
Dissertation: The educational philosophy of Giovanni Gentile.

The Degree of Master of Arts in Education

CHRISTINE ANDERBERY
Thesis: Job analysis and employment relations in store salesmanship basic to a course of study.
MABEL LILLIAN ANDERSON
Thesis: The organization and administration of oral English in senior high schools.

MARJORIE ELIZABETH ANNIN
Thesis: The present status of home economics in the public secondary schools of California

H. WAYLAND BALDWIN
Thesis: The influence of personality on success in teaching.

ALEXANDER J. BARNES
Thesis: A survey of the elementary schools of the Brea-Olinda Union High School District.

MARTHA BUCKMAN BARRET
Thesis: How to teach English to superior children.

MARIETTE SEXTON BEATTIE
Thesis: Physical education in state institutions for the deaf.

DOROTHY DEAN BEAUMONT
Thesis: The status, duties and procedures of deans of women in relation to the educational and vocational guidance programs of colleges and universities.

HOWARD LEAVENWORTH BENEDICT
Thesis: An experiment with the indeterminate assignment in teaching American history.

JOHN BENKART
Thesis: The selection, organization and evaluation of the elements of new type tests in secondary school chemistry.

ARTHUR WALFRED BENNETT
Thesis: A survey of school banking in the city of Glendale, California, for the years 1927 and 1928, with special reference to the intermediate schools.

GEORGE KREBS BLACK
Thesis: Predicting success in ninth grade algebra by ratings obtained through the Terman Group Test of Mental Ability.

LORRAINE M. ALLEN BOARD
Thesis: A musical survey based on an intensive analysis of the Thomas Jefferson Platoon School, Glendale, California.

ROY ARTHUR BOLLINGER
Thesis: Trends in state requirements for the certification of teachers, supervisors, and administrators.

GLADYS HELEN BOND
Thesis: A study in comparison of the art abilities of children of various nationalities.

HARRIET MCCUNE BROWN
Thesis: Teaching aids and activities for junior high school history.

THOMAS R. BROWN
Thesis: Organization and supervision of the high school student body budget.

RALPH WENDELL BURLEIGH
Thesis: The status of the instruction of aeronautics in the schools of California

ESTHER FELTON BYRNE
Thesis: A comparative study of girl reserves with non-girl reserves in the Orange Union High School.

JOHN L. COMPTON
Thesis: A study of non-attendance in the elementary schools of Bakersfield, California

QUINCY COTTING
Thesis: A comparative study of the vocational requirements for pharmacists in the states of the Union

REUBEN ALLEN COVERDALE
Thesis: The organization and administration of public school publicity.

ETHEL CLAIRE CRAIG
Thesis: Methods in the teaching of high school history.

CHESTER KERR DAVIS
Thesis: A survey of the schools of Miami, Arizona.

LEROY LOWRY DOIG
Thesis: Citizenship devices used in the senior high schools of California

ELINOR DORE DOUGHERTY
Thesis: Public education for crippled children in the United States.

HARRY DAY EARHART
Thesis: Bases for ability grouping in junior high schools and a comparison with the Los Angeles plan.

RAYMOND MORGAN ELLIOTT
Thesis: The relative influences of chronological age and mental age upon the achievement of high school boys and girls.

CHARLES CURTIS FABING
Thesis: An experimental study of laboratory manuals in chemistry.

BETH NASH FENNESSY
Thesis: Administering extra-curricular activities in senior high schools.

BLANCHE R. GANG
Thesis: A study of the educational values in natural dancing.

ELIZABETH M. GARDNER
Thesis: Evaluation of improvement of instruction in reading comprehension in grades three to seven in the elementary school.

MAME ELEANOR GOODELL
Thesis: Critical analysis of the placement of commercial high school students in Los Angeles

RUTH EUNICE GORDON
Thesis: Methods of teaching problem solving in junior high school arithmetic.

ORREL LEE GRAHAM
Thesis: An analysis of the grading system of Roosevelt High School.

NELL MAY GRANT
Thesis: Hand-washing facilities and their utilization in the elementary schools of Los Angeles.

ALICE EVANGELINE GREEN
Thesis: The educational theories of Mathew Arnold.

JEANNETTE GREEN
Thesis: A comparative study of the values of chemistry and physiology as eleventh-year college preparatory sciences.

GRACE B. GRINNELL
Thesis: Activity as a theory of education.

BESS ADELIA LEE HANNON
Thesis: A vocational guidance survey of occupational opportunities for men in telephony.

WARREN GAMALIEL HARDING, II
Thesis: The effect of nicotine on the learning curve of the *mus norvegicus albinus.*

CARL OLIVER HARVEY
Thesis: A survey of the Brea-Olinda Union High School.

GRACE HARLOW HEBARD
Thesis: The administration of adult education on the university level.

JETTA FAUSEL HENDERSON
Thesis: Curricular organization of the social studies in the junior high school.

ETHEL MAY HENDRICK
Thesis: How to study geometry.

HENRY DANELLE HEROLD
Thesis: The metal trades exploratory facilities present in the junior high school automobile shop.

WILLA FERRIS JEWETT
Thesis: A prognostic study of the Los Angeles fundamentals and reasoning tests in arithmetic as given to b8 pupils.

MARY ALICE JONES
Thesis: Diagnosis of the employability of the continuation school girls.

HERMAN CHARLES JOY
Thesis: Educational values in the administration of the high school student body finances.

RUTH CHAPMAN JUDD
Thesis: The control of extra-curricular activities by a point system.

MILTON JEROME KATZKY
Thesis: How to handle incorrigible boys in a special school.

CLARENCE WITMER KIME
Thesis: Standards and criteria for academic degrees.

WILLIAM BRUCE KIRKPATRICK
Thesis: An analysis of the professional duties and activities and distribution of time of the boys' vice-principals of the Los Angeles city senior high schools.

MARY LAMBERTON
Thesis: A critical evaluation of the techniques of diagnostic objective tests in foreign languages.

HELEN LOUISE LANDELL
Thesis: The historical development of the teaching of English literature in American secondary schools.

CLAYTON ADOLPHUS LANGWORTHY
Thesis: Homogeneous grouping in arithmetic.

RUTH BARNHIZER LEFEVER
Thesis: The status of the married women teachers in the elementary schools of Los Angeles county.

PHILIP ALLAN LIBBY
Thesis: The significance of certain groupings of the test elements of the Thorndike Intelligence Examination for high school graduates as a basis for the prognosis of college success.

MABEL LILJEDAHL
Thesis: The professional training of teachers of home economics in the degree granting institutions of the United States.

MYRL CARL LICHTENWALTER
Thesis: A survey of the grade promotion progress in the Fulton county, Indiana, public school system.

JOHN BUREN LINTHICUM
Thesis: The classification of Spanish-American beginners in an Albuquerque public school.

NAOMI ELIZABETH MCBURNEY
Thesis: The reorganization of social studies in secondary schools.

ELIZABETH IVY MCCREIGHT
Thesis: Public school revenues, apportionment, and costs in Arizona.

DAVID MCDONALD, JR.
Thesis: An analysis of the trends in content of American history texts used in secondary schools, 1840-1930.

HELEN RUTH MCKEEN
Thesis: An analysis of the professional literature relating to the teaching of shorthand in secondary schools.

JAMES FLOYD MCMASTERS
Thesis: The organization of auditorium work in the platoon school.

MARYELLEN MAHER
Thesis: Case studies of marked disparity between intelligence and accomplishment in arithmetic.

VINCENT PAUL MAHER
Thesis: Student body finances; their administration.

CHARLES WILLIAM MARTIN
Thesis: A survey of the public schools of Imperial county, California.

MYRRL M. MAXFIELD
Thesis: An experimental study of the "individualized" versus the conventional classroom "recitation" method of teaching simultaneous equations.

GEORGE WALTER MONROE
Thesis: Survey of the Owensmouth High School.

JAMES MURRAY
Thesis: The status of corrective speech instruction in the public schools of the United States.

HENRY CLAY NILES
Thesis: An experiment in the intensive teaching of arithmetic to various groups of elementary school pupils.

MAUDE LOUISE OLIVER
Thesis: Administration of extra-curricular activities in the junior colleges of California.

MAUDE ANNA PATTERSON
Thesis: The certification of art supervisors and teachers in the United States.

GERTRUDE WALLENSTEIN PEDDIE
Thesis: A study of problem cases whose troubles can be traced to emotional difficulties in the home.

CLARA M. PETTERSON
Thesis: Present status of instruction in the Constitution of the United States in California secondary schools.

AMY LINCOLN PHELPS
Thesis: Methods of routine procedure for four-year high schools of one thousand or more students.

RALPH BYRON PROUT
Thesis: A study of high school records and reports other than financial.

KATHERINE MARIE REED
Thesis: A diagnostic study of the errors in English in junior high school.

RALPH KING REED
Thesis: Procedures in coaching high school athletics.

MYRTLE HAMILTON RHODES
Thesis: A study of student experiences in the pre-school laboratory as expressed in written interpretations.

BERDENA MARION ROBERTSON
Thesis: The unadjusted girl at El Retiro.

GRACE SATER RODGERS
Thesis: A critical study of the grammatical errors of junior high school pupils.

HAL EARL ROWLEY
Thesis: Classification of school expenditures in four California systems.

THERESIA M. RUSTEMEYER
Thesis: An examination of the records of superior undergraduates.

MARIE ANNA SCHUETTE
Thesis: An evaluation of opinions of principles and their beginning music teachers concerning the adequacy of teacher training courses offered by New York institutions.

CHARLES ROLAND SCUDDER
Thesis: A critical study of standardized mechanical aptitude tests.

RUTH ANN TAIT SEAWELL
Thesis: Guidance practices in the junior high schools of southern California.

RAY BANKER SHAW
Thesis: Non-vocational aims of commercial education in secondary schools.

G. Wheeler Smith
Thesis: A survey of the Simi Valley Union Districts.

Lee Roy Smith
Thesis: The status of agriculture in the elementary schools of southern California.

Margaret Lorraine Smith
Thesis: School counselling: its trends and practices.

Merle Eugene Smith
Thesis: A study of the changes in the marks of junior high school students.

Martha Denton Snyder
Thesis: Procedures employed by teachers in teaching development rooms in Los Angeles elementary schools.

C. Lorene Atchison Sobey
Thesis: Teacher tenure and turnover in the high schools of Los Angeles county from September, 1923, to September, 1928, inclusive.

Carolyn Pike Splann
Thesis: Curriculum and methods for ninth grade general mathematics.

Holland Abram Spurgin
Thesis: A study of the dominant characteristics of adolescent children having superior untrained musical talent.

Mark McKloskey Stanley
Thesis: The preparation for, and the administration of the opening of a senior high school each year.

Cedric Stannard
Thesis: The prognostic value of the MacQuarrie Test for mechanical ability.

Charles Edwin Stickle
Thesis: An analysis of the vocational objectives of the small part-time school of California.

Vera Galbreath Swope
Thesis: Methods of teaching bright children in the junior high school.

Ralph Bell Thomas
Thesis: The influence of home environment as affected by the marital status of the parents upon the compulsory part-time pupil.

Andrew Clinton Thomson
Thesis: Desirability and feasibility of group insurance for California teachers.

Marjorie Utter Thomson
Thesis: Origin and development of the Danish folk high school, with some implications for American education.

Iskah R. Thrall
Thesis: A survey of the records kept by the girls physical education departments in the secondary schools of California.

Catherine Almon Tinkham
Thesis: Requirements and organization of courses in mathematics for the ninth and tenth years in the high schools of California.

George A. Turnbull
Thesis: Cost of education in various junior high schools.

James Don Van Horne
Thesis: An experimental comparison of individual and demonstration methods in high school chemistry.

Mary Rose Vegher
Thesis: A comparative study of children of foreign and American parentage in attaining the dominant objective of the social studies.

Gladys Eva Warren
Thesis: The integration of the school library with the junior high school program.

Reginald Rufus George Watt
Thesis: A comparison of the old and new series of the Thorndike Intelligence Examination.

RALPH WEBB
Thesis: Current practices in the teaching of science in junior colleges.
EMMA MCMEEKIN WEBSTER
Thesis: An evaluation of the part-time program of education of the city of Los Angeles.
JOYCE WICKLESS
Thesis: A study of current procedures in the school auditorium.
JANET BLACK WIECHMAN
Thesis: A survey of equipment and materials used in social studies departments of the Los Angeles junior high schools.
FRANK M. WRIGHT
Thesis: A survey of the El Monte School District.
TETSUTARO YOSHIKAWA
Thesis: Social change and educational theory and practice in Japan.

AT LELAND STANFORD JUNIOR UNIVERSITY

The Degree of Doctor of Philosophy

WILLIAM GEOGRE CARR
Major: Education. *Minor:* English.
Dissertation: The life and educational services of John Swett.
PETER LINCOLN SPENCER
Major: Education. *Minor:* Psychology.
Dissertation: A study of arithmetic errors.

The Degree of Doctor of Education

CHARLES WESLEY BURSCH
Thesis: The technique and results of an analysis of the teaching process in high school English and social science classes.
CHARLES GILBERT SHAMBAUGH
Thesis: Issues bearing upon the demand for teachers in California.

The Degree of Master of Arts

JAMES GLADSTONE AKRIGHT
Thesis: The administration of educational and vocational guidance in the Everett High School.
HOBSON DEWEY ANDERSON
Thesis: Historic development and present status of physical culture in Russia.
FRANK EDWARD BISHOP
Thesis: Public school publicity policies and methods.
ARTHUR EARLE BOBB
Thesis: A study of individual differences in a small high school.
CECIL JAMES CARROLL
Thesis: Twelve standardized tests covering a year's work in high school chemistry.
NORVAL LUTHER CHURCH
Thesis: A statistical study of the seashore "Measures of Musical Talent" and the Kwalwasser "Test of Melodic and Harmonic Sensitivity."
CHARLES CLARENCE CONLEY
Thesis: Current practices in high school newspapers.
DUDLEY SARGENT DEGROOT
Thesis: A teacher's guide to the study of the commoner birds of California.
EMILY DEVORE
Thesis: Creative expression and enjoyment of poetry.
HENRY SHERMAN DOUGLASS
Thesis: An historical survey of the elementary schools of Los Angeles.
GILMORE ADELBERT DUNCAN
Thesis: The use of gymnasiums in rural California high schools.

FREDERICK ERNEST DYCHE
Thesis: The use of the new-type tests in rural county examinations.

CARL MARTIN EKLOF
Thesis: The rural high school principal: A study of his professional qualifications, duties, activities, and problems.

LOYD CREIGHTON ELLIOTT
Thesis: Minimum essentials in high school physics.

BERT MORSE GEORGE
Thesis: A definite supervisory outline for the observation of the teaching processes involved in developing appreciation of English literature.

GUY GAIUS GEORGE
Thesis: The relationship between maze learning and typewriting learning.

CECIL BRAMMER HAYES
Thesis: The American lyceum: Its history and contribution to the advancement of education.

LESTER DALE HENDERSON
Thesis: Should Alaska establish junior colleges?

FRED PERCY HOGAN
Thesis: The history of the Fresno State Teachers College.

CLARENCE IRWIN
Thesis: Principles and methods of research revealed by a study of men of science.

WILLIAM LINCOLN IVERSEN
Thesis: Statutory provision for financing education in the United States in 1840.

WILLIAM ALLISON JOHNSON
Thesis: The duties of a superintendent versus his training.

HALLY FOSTER JONES
Thesis: Test scores and intention of university entrance for California junior college students.

HAROLD BUDD JORY
Thesis: Tax delinquency and its implications for public school finance.

EDWIN CHRISTIAN KRATT
Thesis: Teaching load, salaries, and personal data of rural high school teachers.

OLIVER CROOK LAWSON
Thesis: An experimental study of visual methods in the teaching of eighth grade history.

VIVA MAY LINDAHL
Thesis: Statutory provisions for financing education in the United States in 1895.

FREEMAN GLENN MACOMBER
Thesis: City school supply and equipment inventorying: Present status and needs.

ROBIN PEARL MEAIRS
Thesis: Standardized commercial courses for high schools.

PAUL WILLIAM MOTT
Thesis: The problem of water and equipment in the high school.

MANFORD EUGENE MUSHLITZ
Thesis: Are there too many teachers?

D. LLOYD NELSON
Thesis: High school publications.

LOUIS EDWARD OBERSON
Thesis: The status of the county in financing education in the states west of the Mississippi.

GEORGE LEE OGDEN
Thesis: The relation between major and minor training of Stanford graduates and teaching position held.

WILLIAM AUGUST OTTO
Thesis: A survey of the Mountain View Union High School District.

JAMES HENRY PENDLETON
Thesis: Statutory provisions for financing public education in the United States in 1865.

SAMUEL EVERETT PETERS
Thesis: A study of failures in two California high schools.

JOHN MILTON PLATTS
Thesis: Industrial educational survey of Fresno, California, 1926, and results three years later.

ARTHUR HENRY POLSTER
Thesis: Rules and regulations for a school system in a city of 100,000 to 200,000 population.

HOWARD LEROY RENNICK
Thesis: An experimental determination of the relative effectiveness of the rhythmic and non-rhythmic methods in the teaching of spelling.

DRUSILLA HICHBORN RHODES
Thesis: Preparation of a course of study in reading for the first three grades (of the San Jose school).

CAMILLUS WALTER ROGERS
Thesis: Nationalistic propaganda through contests.

MARVIN ALEXANDER ROGERS
Thesis: The small town as a factor in American education.

CHARLES LEROY RUBY
Thesis: An experiment in learning as applied to a specific sport.

WILLIAM HORTON SPILLERS
Thesis: A vocational survey of some of the smaller high schools in Fresno county.

DONALD HAMMOND THOMPSON
Thesis: The contract plan of lesson assignments in the Longview, Washington, High School.

HUGH MARVIN TINER
Thesis: The playground movement in the United States.

ROBERT CHADWICK TITUS
Thesis: The administration of boys' activities in the elementary schools of the city of Alameda.

NORMA ANNE TOALSON
Thesis: The waste of time in American education.

FLORA WALKER
Thesis: The Isosceles triangle: Its proof and place in present-day high school geometry.

THOM TONG WANG
Thesis: Some significant movements of recent American elementary school education.

GERALD ARTHUR WILLIAMS
Thesis: Analysis of elementary school finance for Redwood City and of the schools of San Mateo county, 1910-1911 to 1928-1929.

JAMES HENRY WINEGARDNER
Thesis: The relation of success in mathematics to success in physics and chemistry in high school.

HARRY REUBEN WOODWARD
Thesis: Public high school dormitories in western states.

SHU-PAN WU
Thesis: A study of higher education for women in the United States.

ALFRED COOMBS YOUNG
Thesis: A history of the administration of Stanford University.

THE HIGH SCHOOL ATTACK UPON THE PROBLEM OF STUDY*

G. C. LOOFBOUROW
Graduate Student, University of California

INVESTIGATORS discussing the study problems and habits of high school pupils have many times pointed out that the classroom is the critical point and the teacher the significant factor in any program for improving study habits. It is the problem of this study to determine to what extent high school administrators and teachers attempt to develop effective habits of study in their pupils, and to examine the practices they use to this end.

The study was made in seventeen of the nineteen senior high schools of the San Francisco Bay region. This group of schools was selected in the belief that, judged by salary and certification requirements, the teachers found there would afford an insight into the attitudes and practices of a group possessing superior educational qualifications. Of a total of 729 teachers of subjects requiring preparation by studying, 482 submitted usable information. Principals of twelve schools submitted data on the administrative approach to the problem.

The information was collected by questionnaire with full knowledge and acceptance of the weaknesses of this method of assembling data, and great pains were taken to so guard the form of the instrument and the use made of the material as to eliminate as much of that weakness as possible. It must be borne in mind in examining the data presented here that they probably constitute a mere sampling of the practices and devices used, including those regarded as most important by the various respondents.

The practices are tabulated, without editing the form of the statement, in such manner as to do least violence to the discernible ideas contained therein. They are presented in order of frequency under subject groupings.

Psychological validation of the practices was attempted by constructing a composite of the rules for study advanced by five leading authorities and verifying these by assembling experimental data on each point sufficient to determine the validity of the rule. This cannot be construed as an attack upon the validity of those practices not falling under this set of rules, but merely as a demonstration of those which can be so classified. (See Appendix.)

Careful investigation failed to reveal any provision, regulation, or restriction bearing upon the teaching of study methods coming from administrative sources outside of the individual school.

The administrative procedures submitted by twelve principals are given in order of frequency of mention.

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* An abstract of a study made at the University of California, under the direction of Professor L. A. Williams.

	Schools
1. Divided hour plan with supervision of study	5
2. General study halls	3
3. Home room or departmental "how to study" campaigns	3
4. Issue bulletins on the subject to teachers	3
5. Provide books on how to study for use of teachers and students	3
6. Use the "Morrison Plan" or adaptations	1
7. Use the "project plan" in some subjects	1
8. Teachers required to observe strictly the time allotment for supervised study	1
9. Teachers required to outline and give pupils the plan of work for the following day	1
10. Furnish each entering student with a bulletin giving suggestions on "how to study"	1
11. Use the 40-minute period taking frequent complete periods for supervised study	1
12. Use the library as a collateral study hall, with a librarian on duty all day	1
13. Special attention to study habits in the ninth grade only. Registry teachers are selected with especial reference to their interest in younger pupils. Study periods arranged especially for low ninth classes with registry teacher in charge	1

The bulletins for teachers range from a relatively simple, half page plea for attention to the problem to a very complete analysis and admirable outline of the teacher's responsibilities, with detailed suggestions as to methods of approach.[1]

The following tabulation is a composite of the suggestions made to teachers by twelve principals:

	Frequency of Mention
Make very clear, definite, and carefully organized assignments	5
Study the individual students and class in planning your own methods	6
Move quietly among students and give aid where needed	2
Impress the students with the importance of a lesson plan and favorable conditions for effective work	2
Require the student to keep an assignment notebook	2
Become acquainted with writers on this subject. Try out what seems to be approved most generally. Try all again and prove	1
Teachers should help pupils do only what they cannot do for themselves	1
Use such methods that pupils will be required to study as directed	1
Check up students' work, methods of approach, and concentration, or lack of it	1
Above all things give the pupil a chance to do some individual work	1
Have the pupil state the problem clearly to himself	1
The pupil should analyze his problem and plan his work—arrange his subject-matter in order under topics and sub-topics. He should then work out his plan and check his results	1
Promptness and daily regularity are essential in training a student	1

[1] Submitted by Principal J. P. Nourse of Galileo High School, San Francisco.

Define study as concentration and a vivid, accurate picturing. The results of study are pictures and understanding..... 1
A definite plan to be followed by the pupil as to the order in which he takes up his studies..... 1
Constant attention to the meanings of the terms used..... 1

The composite of these administrative procedures and suggestions appears fairly complete and adequate. However, examination of the frequencies with which each was mentioned reveals that the "how to study" programs of the several schools must be limited in scope and completeness.

The expressions of the administrators interviewed would reveal that while they recognize the problem and are beginning to take an interest in its solution, active steps have been taken only in scattered cases.

TABLE I.

RESPONSES OF 482 TEACHERS TO THE QUESTION: "WHAT SPECIFIC DEVICES DO YOU USE IN THIS (YOUR) SUBJECT TO HELP PUPILS STUDY?"

	English	History, Social Science	Mathematics	Foreign Language	Commercial	Sciences	Shorthand	TOTAL
Issue problems, questions, guides for study	40	44	1	1	8	32	....	126
Point out important or difficult points in making assignment	22	10	21	27	2	5	7	94
Make definite and careful assignments	31	16	5	7	2	14	5	80
Supervised study	10	15	18	18	1	7	....	69
Teach a systematic or analytic approach to the problem	10	10	26	1	5	14	2	68
Teach students to select important points in reading	22	17	....	6	4	13	....	62
Make notes or outlines while studying	7	38	1	....	1	4	....	51
Individual help	10	12	6	10	....	8	....	46
Form and use a time budget (Time study habit.)	11	6	6	3	1	13	1	41
Class drills in fundamentals	....	1	7	23	....	4	6	41
Insist on concentration	7	7	4	10	1	8	....	37
Assign special reports on outside materials	10	12	....	1	3	5	....	31
Relate the new assignment to previous work	3	5	5	11	....	7	....	31
Use outside references	2	17	1	....	2	7	....	29
Make (search for) practical applications of principles	1	1	7	8	3	9	....	29
Talks, discussions, bulletins, on how to study	7	5	2	2	1	7	3	27
Read lesson quickly for general idea, then concentrate on important point	6	13	1	2	1	3	1	27
Prepare occasional lessons in class (demonstrate method)	6	1	4	6	2	7	....	26
Understand the assignment before starting work	13	2	....	1	....	5	3	24
Teach students how to use dictionary (use freely in study)	6	4	2	....	1	9	1	23
Frequent (objective) (mastery) tests	5	5	1	7	....	3	....	21
Have favorable physical conditions for study	6	4	1	2	....	5	2	20
Keep a written record of assignments (require)	11	2	....	1	1	4	....	19
Discuss (help students find) sources of information	2	12	....	....	2	2	....	18

	English	History, Social Science	Mathematics	Foreign Language	Commercial	Sciences	Shorthand	Total
Teach full use of indexes, footnotes, tables of contents	1	3	....	4	1	9	....	18
Introduce new topics by discussions or demonstrations	8	....	2	6	....	2	....	18
Check up your own results	5	....	1	2	....	6	3	17
Questions on or discussions of doubtful points in class	1	....	8	2	3	3	....	17
Frequent reviews	2	2	2	3	....	6	2	17
Require abstracts or outlines of reading	1	1	....	1	4	10	....	17
Stress regularity (assign home work regularly)	1	7	5	....	....	2	....	15
Have a definite aim in your work	5	2	....	....	....	7	....	14
Use of graphic aids, maps, charts, etc	1	12	....	....	1	....	....	14
Deduce principles from observation of applications	....	....	....	2	2	9	....	13
Summarize study in your own words	8	2	1	....	....	1	....	12
Stress comprehension and reasoning rather than memorizing	....	....	8	....	....	4	....	12
Class projects	3	3	....	3	1	1	....	11
Emphasize the importance of attention	2	....	....	1	....	8	....	11
Have students make a study plan	3	....	1	4	....	2	....	10
Group work	1	4	....	1	....	1	1	8
Teach pupils to study by wholes	2	....	....	3	2	....	1	8
Short unit assignments	....	5	3	....	....	....	....	8
Note and explain new terms	....	6	....	....	....	2	....	8
Provide "tools" before beginning work	2	....	1	1	....	3	....	7
Stress accuracy of observation	2	....	....	....	1	4	....	7
Occasionally outline a plan of study for a particular lesson	4	....	....	3	....	....	....	7
Construct outlines on the blackboard	....	....	....	....	1	6	....	7
Require written answer to detailed questions on lesson	....	....	....	....	....	7	....	7
Set a time limit for the completion of each lesson	5	1	....	....	....	....	....	6
Accept only well done (perfect) work	2	....	....	....	....	2	2	6
Select essential points	....	....	1	2	1	....	2	6
Read lessons aloud	....	2	....	4	....	....	....	6
Dictate model (type letters and forms)	3	....	2	....	....	....	....	5
Plan work in large (comprehensive) units at beginning of term	3	....	....	....	....	2	....	5
Class correction of written work	1	....	....	3	....	....	1	5
Try to arouse the proper attitude ("want to know")	....	2	1	....	....	2	....	5
Encourage students to go beyond the requirements	3	....	....	....	....	1	....	4
Require notebook work (on difficulties)	....	....	3	....	....	1	....	4
Require daily recitation (check-up) on home work	....	....	....	2	....	2	....	4
Review previous lesson before attacking the new	2	....	....	....	1	1	....	4
Have class participate in planning	1	....	1	....	....	2	....	4
Have students construct questions (objective tests)	2	2	....	....	....	....	....	4
Study with the intent to recall	2	....	....	1	....	....	....	3
Plunge into your work energetically	....	....	3	....	....	....	....	3
Teach pupils to think scientifically (scientific attitude)	....	....	1	....	....	2	....	3
Discuss topics for composition	2	....	....	....	....	....	....	2
Special "extra hour" study class	1	1	....	....	....	....	....	2
Start work on assignment immediately after recitation	1	1	....	....	....	....	....	2
Eliminate waste time (proper utilization)	....	1	....	....	....	1	....	2
Study alone	....	....	1	1	....	....	....	2
Encourage informality and friendly competition	1	....	....	....	....	....	1	2
Block out solution before figuring details	....	....	2	....	....	....	....	2
Make written note of difficulties	1	....	....	....	....	....	....	1
Concentrate your time on difficult points	....	....	....	....	....	....	1	1

	English	History, Social Science	Mathematics	Foreign Language	Commercial	Sciences	Shorthand	Total
Teach student to analyze his own difficulties	1	....	....	....	....	....	....	1
Variety of presentation	1	....	....	....	....	....	....	1
Give outlines for literary criticism	1	....	....	....	....	....	....	1
Encourage the use of text as a reference work	1	....	....	....	....	....	....	1
Practice various devices to aid concentration	1	....	....	....	....	....	....	1
Give assignment at the beginning of the period	1	....	....	....	....	....	....	1
Post grade charts	1	....	....	....	....	....	....	1
Organization of thought in writing	1	....	....	....	....	....	....	1
Reports on students' methods of study	1	....	....	....	....	....	....	1
Emphasize original thought	1	....	....	....	....	....	....	1
Do not apply for help until you have to	1	....	....	....	....	....	....	1
Remember that you are working for yourself	1	....	....	....	....	....	....	1
Give regular work, permit students to fail if they wish	....	1	....	....	....	....	....	1
Outlining before study	....	1	....	....	....	....	....	1
Use the contract plan	....	1	....	....	....	....	....	1
Memorize important facts	....	1	....	....	....	....	....	1
Compare viewpoints of individuals and systems	....	1	....	....	....	....	....	1
Radio lectures	....	1	....	....	....	....	....	1
Work out your own solution, then compare with text	....	....	1	....	....	....	....	1
Stress relation of subject to other fields of knowledge	....	....	1	....	....	....	....	1
Have a definite form for written work	....	....	1	....	....	....	....	1
Train students to visualize figures and relationships	....	....	1	....	....	....	....	1
Generalize ideas upon completion of a unit	....	....	1	....	....	....	....	1
Drill on special reasoning procedures	....	....	1	....	....	....	....	1
Outline the rules	....	....	1	....	....	....	....	1
Make outline summaries of proof	....	....	1	....	....	....	....	1
Have students present new topics	....	....	1	....	....	....	....	1
Never assign unpresented material	....	....	1	....	....	....	....	1
Teach students to study from the printed page	....	....	1	....	....	....	....	1
Vary conventional letterings to make pupils think	....	....	1	....	....	....	....	1
Discover pupil's background for new principles	....	....	1	....	....	....	....	1
Translate, using the language order. Look up words later	....	....	....	1	....	....	....	1
Verb synopsis	....	....	....	1	....	....	....	1
Develop habits of exactness	....	....	....	1	....	....	....	1
Sight reading in class	....	....	....	1	....	....	....	1
Informal conversations in the language	....	....	....	1	....	....	....	1
Simplified grammar charts	....	....	....	1	....	....	....	1
Use all kinds of "realia"	....	....	....	1	....	....	....	1
Stress visualization of vocabularies	....	....	....	1	....	....	....	1
Suggest methods and devices for learning vocabularies	....	....	....	1	....	....	....	1
Analyses of word forms	....	....	....	1	....	....	....	1
Sentence analyses	....	....	....	1	....	....	....	1
By repetition attempt to develop logic and memory	....	....	....	1	....	....	....	1
Outlines in the language of selections read by teacher	....	....	....	1	....	....	....	1
Learn words in word groups	....	....	....	1	....	....	....	1
Have pupils sound vowels first, then fill in consonants in pronunciation drills	....	....	....	1	....	....	....	1
Supervise written practice of materials to be memorized	....	....	....	1	....	....	....	1
Require progress reports	....	....	....	1	....	....	....	1
Use practice exercises and problems	....	....	....	....	....	1	....	1
Cultivate conciseness and correctness of expression	....	....	....	....	....	1	....	1
Determine reading abilities, special references to weak	....	....	....	....	....	1	....	1
Teach students to apply mental hygiene to studying	....	....	....	....	....	1	....	1

	English	History, Social Science	Mathematics	Foreign Language	Commercial	Sciences	Shorthand	Total
Give them the rules from educational psychology	....	....	....	....	....	1	....	1
Instruction in reporting outside reading	....	....	....	....	....	1	....	1
Stress dangers of dogmatic generalities	....	....	....	....	....	1	....	1
Written reports on laboratory work	....	....	....	....	....	1	....	1
Drill until each pupil's work is satisfactory	....	....	....	....	....	1	....	1
Stress the fundamentals	....	....	....	....	....	1	....	1
Require students to devise original experiment	....	....	....	....	....	1	....	1
Give lists of questions from which test will be taken	....	....	....	....	....	1	....	1
Teach correct method of practicing	....	....	....	....	....	....	1	1
Issue mimeographed lists of specialized vocabularies	....	....	....	....	....	....	1	1
Practice the outlines	....	....	....	....	....	....	1	1
Get help at home by having materials dictated	....	....	....	....	....	....	1	1
Use the "self dictation" method	....	....	....	....	....	....	1	1
Keep trying for speed	....	....	....	....	....	....	1	1
Concentration on accuracy and beauty of form	....	....	....	....	....	....	1	1
Do not practice outlines too many times at once	....	....	....	....	....	....	1	1
Praise the pupils' work	....	....	....	....	....	....	1	1
Stress the economic value of good work	....	....	....	....	....	....	1	1
Approximate office conditions as nearly as possible	....	....	....	....	....	....	1	1
Wordsign drills	....	....	....	....	....	....	1	1

Table I is intended primarily as an exhibit of the quality of the thinking and practice of teachers. It is needless to point out numerous instances in which the responses are neither "specific" nor "devices," nor is it necessary to comment upon the superficial character of some of them.

It will be noted that thirty-nine practices were listed ten or more times, and twenty-two were listed from two to ten times, while the remaining seventy-four were listed by only one teacher in one subject. This distribution of the practices of Table I appears in Table II.

TABLE II.

Practices	*Number*	*Number of Listings*	*Per cent of Listings*
Listed in all seven subject groups	6	337	22%±1.35
Listed in six or more subject groups	13	647	43%±1.51
Listed in five or more subject groups	30	1127	75%±1.33
Listed in four or more subject groups	38	1221	81%±1.22
Listed in only one subject group	74	74	4%±0.60
Unmistakably specialized	40	30	2%±0.43

This clearly reveals one fact: that the practices teachers use in helping their pupils study in their subjects are in no sense highly specialized. This condition would appear to raise the question of the possibility of a "general study plan" which could be expected to function throughout the entire range of high school subjects. Another condition apparent in this tabulation which compels attention is the small number of practices directed

toward the motivation of study. Only eighteen practices, embracing 16±1.13% of the total number of listings, can, under the most liberal interpretation, be construed as attempts at motivation. It is clear that a large majority of these teachers overlook a very significant factor in the success of this type of training.

Of the 482 teachers whose returns are included in this study, only seventeen made reference to, or suggested, the use of any of the books current on "how to study."

TABLE III.

TEACHERS' RESPONSE TO THE QUESTION: "HAVE YOU ORGANIZED A 'PLAN OF STUDY' THAT YOU TRY TO TEACH PUPILS TO USE?"

Subject group	*Yes*	*Per cent*	*No*	*Per cent*	*No response*	*Per cent*	*Total Number*
English	76	72±1.38	27	25±1.33	3	3±0.52	106
History, Soc. Sci.	71	78±1.27	19	21±1.25	1	1±0.30	91
Mathematics	55	82±1.18	12	18±1.18	0	0	67
Foreign Language	61	73±1.36	21	26±1.35	1	1±0.30	83
Commercial Prep.	18	100	0	0	0	0	18
Sciences	66	74±1.35	21	24±1.31	2	2±0.43	89
Shorthand	26	93±0.71	2	7±0.72	0	0	28
Totals	373	79±1.25	102	21±1.25	7	0.014	482

More than one-fifth of the teachers do not have such a plan. Several teachers, notably English teachers, expressed the opinion that the study situations were so diversified as to make "a plan" impossible. However, examination of the practices submitted by English teachers does not appear to show characteristic groups of practices such as would bear out this contention.

TABLE IV

RESPONSES OF TEACHERS TO THE QUESTION: "WHAT PRACTICE DO YOU CONSIDER 'CENTRAL' OR MOST IMPORTANT IN THIS PLAN?"

	English	History, Social Science	Mathematics	Foreign Language	Commercial	Sciences	Shorthand	Total
*Regularity (regular daily time for study)	5	2	5	6	1	8	1	28
Ability to analyze and organize materials	2	10	10	2	1	....	....	25
*Practice of concentration	5	1	5	8	1	3	1	24
*Ability to evaluate the importance of materials	4	4	1	1	1	10	....	21
*Read whole for comprehension then stress important points	5	5	1	3	4	1	....	19
*Understanding the central idea of the assignments	10	1	2	....	2	....	2	17
*Have a definite objective in mind	5	1	1	4	....	2	3	16

*Indicates validated practices.

	English	History, Social Science	Mathematics	Foreign Language	Commercial	Sciences	Shorthand	Total
*Outlining	3	2	1	5	5	....	....	16
Study questions, guide and work sheets	4	6	....	1	5	....	....	16
Clear and definite assignment	2	2	2	2	....	2	....	10
*Drill	....	....	2	2	1	2	3	10
Ability to search out answers to questions	4	2	....	1	2	....	....	9
Proper conditions for study	1	3	....	1	....	2	....	7
Develop systematic (or scientific) habit of thinking	....	....	3	....	....	4	....	7
*Concentrate your time and effort on important points	1	3	....	....	....	....	2	6
*Express important points in your own words	1	4	....	....	1	1	....	6
Supervised study	1	2	2	1	....	....	....	6
Systematic (broad) presentation of new materials	1	2	3	....	....	....	....	6
*Memorizing essentials	....	1	....	3	....	1	....	5
Exactness, accuracy (of observation)	1	1	....	....	1	2	....	5
*Search out practical (or new) applications	....	2	....	1	....	1	....	4
*Stress reasoning as against memorizing	....	....	3	....	1	....	....	4
*Self examination (or check up) of work	1	....	....	1	....	1	1	4
*Reading aloud	....	....	....	4	....	....	....	4
Individual help	....	1	....	2	....	1	....	4
*Use the study plan given	....	1	1	1	....	1	....	4
*Take on the attitude of study (feel the urge)	1	1	1	....	....	1	....	4
*Visualization of the problem (or essentials)	....	....	3	1	....	....	....	4
*Reviews	....	1	....	1	1	....	....	3
Anticipate and prevent student difficulties	1	....	1	1	....	....	....	3
*Keeping an assignment book	1	1	....	....	....	1	....	3
The laboratory method	....	....	....	....	....	3	....	3
*Attention	1	....	....	1	....	....	....	2
Collecting materials	....	1	....	....	....	1	....	2
Arouse pupils' interest (or initiative)	....	....	1	....	....	....	1	2
Think the job through to the conclusion	....	....	2	....	....	....	....	2
Accurate reading of the problem	....	....	2	....	....	....	....	2
Think the problem in terms of the facts given	....	....	2	....	....	....	....	2
*Training to use the language, orally and written	....	....	....	2	....	....	....	2
*Correlation of new ideas with old	....	....	....	....	....	2	....	2
*Student ability to analyze his own difficulties	1	....	....	....	....	....	....	1
Use of the text as a reference book	1	....	....	....	....	....	....	1
Definite goal for each class period	1	....	....	....	....	....	....	1
*Setting of individual standards toward which to work	1	....	....	....	....	....	....	1
Emphasize original thought	1	....	....	....	....	....	....	1
Appreciation and absorption by whole rather than piecemeal	1	....	....	....	....	....	....	1
Stress the usefulness of English	1	....	....	....	....	....	....	1
*The use of a notebook for correlation	1	....	....	....	....	....	....	1
Rewriting corrected copies of class exercises	1	....	....	....	....	....	....	1
Visualize the idea and check the structure	1	....	....	....	....	....	....	1
*The teacher's own philosophy of the subject	....	1	....	....	....	....	....	1
Oral reports on the significance of the lesson	....	1	....	....	....	....	....	1
Reading for general background	....	1	....	....	....	....	....	1
*Graphic summaries	....	1	....	....	....	....	....	1
To try to form some kind of a philosophy	....	1	....	....	....	....	....	1
*Careful reading and note taking	....	1	....	....	....	....	....	1
*Block out solution before beginning on details	....	....	1	....	....	....	....	1

*Indicates validated practices.

	English	History, Social Science	Mathematics	Foreign Language	Commercial	Sciences	Shorthand	Total
Keep actively busy on organized work	....	....	1	....	....	....	....	1
Have pupils find their own solution—check with text	....	....	1	....	....	....	....	1
Have pupils discover rule from usage	....	....	....	1	....	....	....	1
*Associate words with objects	....	....	....	1	....	....	....	1
Thorough study in the language before writing exercises	....	....	....	1	....	....	....	1
*Systematic study	....	....	....	1	....	....	....	1
Use of language models as the heart of the lesson	....	....	....	1	....	....	....	1
*Review the previous day's assignment	....	....	....	1	....	....	....	1
Stress relation of little things with big ones	....	....	....	1	....	....	....	1
*Rapid reading without looking up words	....	....	....	1	....	....	....	1
*Vocabulary building practice	....	....	....	1	....	....	....	1
Student co-operation with each other	....	....	....	1	....	....	....	1
*Verb drills	....	....	....	1	....	....	....	1
Do the written work in class	....	....	....	1	....	....	....	1
Stress relationship with English	....	....	....	1	....	....	....	1
Teaching accuracy and independence in pronunciation	....	....	....	1	....	....	....	1
Checking up pupils' memory of facts	....	....	....	....	1	....	....	1
The actual working of the problem	....	....	....	....	1	....	....	1
Discovery of general principles on which science is built	....	....	....	....	....	1	....	1
System of outside references	....	....	....	....	....	1	....	1
Giving reason for the form of the outline	....	....	....	....	....	....	1	1
Home study	....	....	....	....	....	....	1	1
*Drill in writing from dictation	....	....	....	....	....	....	1	1
Keen desire to excel in class	....	....	....	....	....	....	1	1
Group study	....	....	....	....	....	....	1	1
*Self dictation	....	....	....	....	....	....	1	1
*Reading of outlines	....	....	....	....	....	....	1	1

*Indicates validated practices.

The data of Table IV clearly indicate the relative importance placed by teachers upon various elements in the pupil's total study situation. Four major tendencies are apparent. Of the practices presented here, 85±1.25% can be loosely grouped under four headings.

1. Mechanics of study or classroom procedure....42±1.73%
2. Organization and analysis of material.....22±1.45%
3. Method of making or taking the assignment....13±1.17%
4. The ability to read effectively..... 8±0.95%

It will be observed that this emphasis reverses traditional notions as to the importance of these factors.

TABLE V.

TEACHERS' RESPONSES TO THE QUESTION: "DOES A MAJORITY OF YOUR PUPILS APPEAR TO ADOPT THE PLAN AND USE IT HABITUALLY?"

Subject group	*Yes*	*Per cent*	*No*	*Per cent*	*No response*	*Per cent*	*Total Number*
English	56	74±1.53	10	13±1.17	10	13±1.17	76
History, Soc. Sci.	60	84±1.28	3	5±0.76	8	11±1.16	71
Mathematics	46	85±1.26	3	5±0.76	6	10±0.99	55
Foreign Language	47	77±1.47	9	15±1.25	5	8±0.95	61
Commercial Prep.	15	83±1.31	1	6±0.83	2	11±1.16	18
Sciences	36	53±1.75	21	32±1.63	9	15±1.25	66
Shorthand	22	85±1.25	0	0	4	15±1.25	26
Totals	282	76±1.49	47	12±1.13	44	12±1.13	373

Table V, as an exhibit of teacher opinion as to the practice of students in this respect, is interestingly optimistic but of no material factual significance. It appears probable that the teachers have used classroom success as the criterion by which they judged whether or not the pupil used the proposed study plan.

TABLE VI.

RESPONSES TO THE QUESTION: "IS THE PLAN DEVISED ESPECIALLY TO AID POOR STUDENTS?"

Subject group	*Yes*	*Per cent*	*No*	*Per cent*	*No response*	*Per cent*	*Total Number*
English	41	54±1.74	29	38±1.69	6	8±0.95	76
History, Soc. Sci.	30	42±1.73	36	50±1.75	5	8±0.95	71
Mathematics	20	36±1.67	31	57±1.72	4	7±0.89	55
Foreign Language	21	35±1.63	38	62±1.69	2	3±0.59	61
Commercial Prep.	7	39±1.70	9	50±1.75	2	11±1.16	18
Sciences	28	42±1.73	34	51±1.75	4	6±0.83	66
Shorthand	11	41±1.72	15	58±1.73	0	0	26
Totals	158	41±1.72	192	54±1.74	23	5±0.76	373

That 41±1.72% of the study plans organized by these teachers are planned especially for poor pupils with apparent disregard for the majority of the pupils appears to afford evidence that the question of teaching pupils how to study is, in the minds of a large proportion of teachers, largely a matter of providing a solution to immediate classroom problems. In the thinking of almost one-half of these teachers, prevention of failure would seem to be the criterion of success in teaching how to study.

TABLE VII.

RESPONSES TO THE QUESTION: "DO YOU ATTEMJT TO GO BEYOND YOUR OWN SUBJECT IN HELPING THE PUPILS TO USE THIS PLAN?"

Subject group	*Yes*	*Per cent*	*No*	*Per cent*	*No response*	*Per cent*	*Total Number*
English	56	74±1.53	16	21±1.42	4	5±0.76	76
History, Soc. Sci.	32	45±1.74	32	45±1.74	7	10±0.99	71
Mathematics	38	69±1.61	16	29±1.58	1	2±0.49	55
Foreign Language	37	61±1.71	22	36±1.67	2	3±0.59	61
Commercial Prep.	7	39±1.70	9	50±1.75	2	11±1.16	18
Sciences	38	58±1.73	22	33±1.65	6	9±0.94	66
Shorthand	13	50±1.75	12	46±1.72	1	4±0.69	26
Totals	221	59±1.72	129	34	23	7±0.89	373

That teachers do not consider the study situations as highly specialized in their own subjects has previously been suggested. Table VII offers confirmatory evidence of this opinion, since it reveals that more than one-half of the teachers help their students to apply their plan of study to other subjects.

No significant difference was observable in the responses of those teachers designated as "superior" by their principals.

The facts, as revealed in the data presented, point to several definite conclusions regarding present efforts to teach high school students how to study.

Although teachers are interested and desirous of helping pupils to learn to study, their efforts appear to be directed toward widely different objectives, they adopt widely different means to attain them, and they are ignorant of, or ignore, available helps and suggestions for attaining the desired ends.

The lack of organization evidenced in the practices used by many teachers raises a question as to whether, knowing desirable habits of study, they can be attained incidentally in teaching subject content, or make the definite organization of a plan of study for the pupil's use necessary or advantageous.

The very small degree of specialization in the practices used in subject groups raises a question as to the feasibility of a "general study plan."

Efforts of teachers appear to be directed toward finding palliatives for their own immediate classroom problems rather than toward creating the power to study effectively in their students.

It is evident that experimentation is needed to determine scientifically the abilities necessary for success in the studies of each subject group, and to reveal effective techniques for developing these abilities in the form of real and permanent habits before a successful program of improvement in training for study can be undertaken.

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APPENDIX

The composite of rules on "how to study," used in validation of the practices of Table IV, is presented as an appendix.

Psychological Validation

The evidence cited here does not pretend to exhaust the experimental data on rules for studying. The effort was made to cite only sufficient data to resolve the case for or against the rule.

The names following each rule indicate its sponsors. The compass of the present paper does not permit the citation of the extensive bibliography of experimental studies used in this validation.

Rules for Effective Study

Have proper environmental conditions for study.* (Whipple, Book, Touton.)

Keep yourself in good physical condition. Attend to physical defects and handicaps. (Whipple, Book, Sandwick, Touton.)

Form a definite time and place study habit. (Whipple, Book, McMurry, Touton, Sandwick.)

Seek motives for your work. Get the idea that you are working for yourself. Take the attitude that you are preparing for responsibility. Make your tasks definite. (Whipple, Book, McMurry, Touton, Sandwick.)

Plunge into the task energetically. Take on the attitude of attention. Feel the urge. (Whipple, Book, McMurry, Touton, Sandwick.)

Make a job analysis for the purpose of improving your methods of attacking your work. Seek short cuts. Ascertain by trial whether you succeed best by beginning with the hardest or easiest task. (Whipple, Book, Touton.)

Work intensely. Concentrate. Check every tendency to wander. Do not let intense application become fluster or worry. (Whipple, Book, Touton.)

Do your work with the intent to learn and recall. (Whipple, Book.)

Do your best. Promote self-respect and confidence by giving only your best efforts. (Whipple, Book.)

Do not seek help until you are forced to. (Whipple.)

Keep a written record of your progress. Check up on your results. Take pride in each new evidence of power. (Sandwick, Book, Touton.)

Prepare the advance assignment in a subject immediately after the recitation. Review the major issues just before going to class. (Whipple.)

Keep a careful written record of assignments and study suggestions or outlines. (Book, Touton.)

***The evidence raises a question as to the necessity for this rule. It is probably admissable for practical rather than theoretical reasons.**

Take a moderate amount of class notes and rewrite them into a comprehensive outline. (Whipple.)

Ascertain the teaching method in each class and make your preparation the same form of activity that will be demanded later. (Whipple.)

Learn to select and stress the fundamental points. Do not spend needless time on non-essentials. Discriminate. Spend the most time on weak points in your knowledge or technique. (Book, Whipple, McMurry, Touton, Sandwick.)

Carry the learning beyond the point necessary for immediate recall. Distribute your practices at increasing intervals. (Book, Whipple, Touton, McMurry, Sandwick.)

For extensive, or complex, material outline it, and if you wish to retain it write or memorize the outline. (Whipple, Touton, McMurry, Sandwick.)

Do not hesitate to commit to memory verbatim such materials as technical definitions, formuli, dates or outlines, provided you understand them. (Whipple, Book, McMurry.)

Before beginning the advance work, review the previous lesson. Then make a rapid preliminary survey of the assigned material, outlining the problem. (Whipple, Book, McMurry, Touton, Sandwick.)

Use various devices to force yourself to think over your work. Review mentally each paragraph as you read it. State the important point to yourself verbally. (Whipple, Book, Touton, Sandwick.)

Visualize conditions and relationships, making sketches, charts, diagrams, etc. Multiply forms of imagery. (Book, Touton, Sandwick.)

Make the duration of your period of study long enough to utilize "warming up," but not so long as to suffer fatigue.* (Whipple.)

Seek to increase your vocabulary. Use the dictionary freely while studying. (Touton.)

When material to be memorized presents no logical association, invent artificial ones for learning and recalling it. (Whipple, Book.)

In committing verbal material to memory, learn it as a whole, not in parts. (Whipple, Book, McMurry.)

Utilize your textbooks fully. Learn to use cross references, indexes, tables, and topic sentences. (McMurry, Touton.)

After intensive application, especially to new material, pause for a time and allow the mind to lie "fallow" before taking up new work. (Whipple, Book.)

When you interrupt work, not only stop at a natural break but leave a clue for its quick resumption. (Whipple.)

In all your work apply your knowledge as much as possible, and as soon as possible. Make personal application to yourself. (Whiple, Book, McMurry, Touton, Sandwick.)

Read with the express purpose of isolating and grasping the fundamentals. Get the meaning of each idea. (Whipple, Book, McMurry, Touton.)

Make notes on important points in your reading. If using your own book, mark it to make essential ideas stand out clearly. (Whipple, Touton.)

Keep before you the purpose for which you are reading. Think critically about your reading. Go beyond the book and draw your own conclusions. (Whipple, Book, McMurry, Touton.)

Force yourself to read rapidly. Read phrases rather than words. Work to increase your eye span. (Book, McMurry, Touton.)

In preparing for examinations avoid memorizing details. Get a skeleton view of the subject. (McMurry.)

Maintain a tentative attitude toward knowledge. Avoid fixed ideas. (McMurry, Touton.)

Contribute to group discussions. (McMurry.)

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*The evidence would appear to invalidate this rule.

REPORT ON HIGH EIGHTH GRADE MENTAL TEST IN THE OAKLAND PUBLIC SCHOOLS*
(Spring Semester, 1930)

C. C. GROVER
Supervisor of Tests and Classification, Oakland

FOR a number of years the Terman Group Test of Mental Ability has been used as a survey test in the H-8 grade, and the following report is a summary of the results of this test for the Spring semester, 1930.

The distributions of chronological ages, mental ages, and intelligence quotients obtained from the test results are given in Tables I, II, and III, respectively.

TABLE I.
DISTRIBUTION OF CHRONOLOGICAL AGES FOR H-8 GRADE
February 24, 1930

Age Interval	*Number of Pupils*
11-0—11-5	4
11-6—11-11	9
12-0—12-5	48
12-6—12-11	172
13-0—13-5	331
13-6—13-11	478
14-0—14-5	379
14-6—14-11	284
15-0—15-5	167
15-6—15-11	85
16-0—16-5	36
16-6—16-11	8
17-0—17-5	2
17-6—17-11	3
18-0 or above	1
Total	2007
Q1	13-4
Median	13-11
Q3	14-7

TABLE II.
DISTRIBUTION OF MENTAL AGES FOR H-8 GRADE
February 24, 1930
(Mental ages obtained from Terman Group Test of Mental Ability.)

Age Interval	*Number of Pupils*
10-0—10-5	9
10-6—10-11	26
11-0—11-5	58
11-6—11-11	109
12-0—12-5	146
12-6—12-11	250
13-0—13-5	205
13-6—13-11	250
14-0—14-5	267
14-6—14-11	202
15-0—15-5	172
15-6—15-11	112
16-0—16-5	100
16-6—16-11	49
17-0—17-5	25
17-6—17-11	20
18-0 or above	7
Total	2007
Q1	12.9
Median	13-10
Q3	14-11

*For a number of years a required intelligence test survey has been made in certain grades in the Oakland public schools as a part of the regular testing program. One of the grades in which such a survey is taken each semester is the H-8, and the report below is merely a condensed form of the one which is made regularly each semester and submitted to the Superintendents' Council and to the Junior High School Principals' Conference in Oakland.

WILLIAM F. EWING,
Assistant Superintendent of Schools.

TABLE III.

DISTRIBUTION OF INTELLIGENCE QUOTIENTS FOR H-8 GRADE

February 24, 1930

(Intelligence Quotients obtained from Terman Group Test of Mental Ability.)

Interval	*Number of Pupils*
55— 59	2
60— 64	2
65— 69	18
70— 74	43
75— 79	98
80— 84	167
85— 89	177
90— 94	228
95— 99	271
100—104	265
105—109	214
110—114	174
115—119	133
120—124	92
125—129	61
130—134	34
135—139	18
140—144	3
145—149	5
Above 150	2
Total	2007
Q1	89
Median	99
Q3	110

In Table IV are summarized by schools the median and first and third quartiles of the distributions of chronological ages, mental ages, and intelligence quotients for the Spring semester.

This table is inserted primarily as a source table so that any detailed information about the intelligence level in the various junior high schools may be available. (It should be noted that the median mental age divided by the median chronological age will not give the median intelligence quotient if the distributions are skewed, and this fact accounts for the divergence of a point or two which may be noted in the intelligence quotients obtained in several of the schools.)

TABLE IV.

DISTRIBUTION BY SCHOOLS OF MEDIAN CHRONOLOGICAL AGES, MENTAL AGES AND INTELLIGENCE QUOTIENTS IN THE H-8 GRADE

Spring Semester, 1930

(Mental agents and intelligence quotients obtained from Terman Group Test of Mental Ability.)

School	Number Pupils	Median Chronological Age			Median Mental Age			Median Intelligence Quotient		
		Q1	Md.	Q3	Q1	Md.	Q3	Q1	Md.	Q3
1	139	13-2	13-11	14-5	12-9	13-9	14-7	90	100	108
2	108	13-0	13-6	13-11	13-9	14-8	15-7	99	107	117
3	136	13-7	14-2	14-9	12-0	12-10	13-11	82	91	100
4	181	13-3	13-9	14-3	13-6	14-3	15-2	95	105	113
5	133	13-11	14-7	15-3	11-11	12-9	13-11	80	87	100
6	32	13-8	14-2	14-9	13-1	13-9	14-4	90	96	105
7	198	13-5	13-10	14-8	13-1	14-2	15-4	92	101	112
8	106	13-1	13-9	14-5	12-8	13-6	14-4	88	95	107
9	41	13-9	14-5	15-3	13-9	14-6	15-6	93	101	109
10	126	13-3	13-11	14-6	12-10	13-9	14-10	90	99	109
11	114	13-8	14-5	15-2	12-8	13-7	14-6	86	95	104
12	175	13-2	13-8	14-3	13-7	14-7	15-6	96	106	117
13	83	14-3	14-11	15-6	11-6	12-7	13-6	76	84	94
14	85	13-4	13-11	14-6	11-9	12-9	13-9	90	99	110
15	82	13-3	13-8	14-4	13-11	15-0	16-3	98	107	119
16	145	13-2	13-9	14-4	13-11	14-7	15-5	99	106	114
17	123	13-6	14-1	14-9	12-7	13-4	14-5	87	94	107
Total	2007	13-4	13-11	14-7	12-9	13-10	14-11	89	99	110

In Table V the schools are arranged in order of median chronological age and in Table VI they were arranged in order of median intelligence quotient. With one or two exceptions the number of pupils is sufficiently large for the median values to have significance. The H-8 grade is an excellent grade with which to sample a junior high school, and the test used is considered to be a valid one and has a high reliability.

Tables V and VI, therefore, furnish a very good measure of the relative ability of the pupils in the various junior high schools in Oakland to do public school work.

TABLE V.

MEDIAN CHRONOLOGICAL AGE OF H-8 GRADE PUPILS

Schools Arranged in Ascending Order of Median Chronological Age.

February 24, 1930

Schools	*No. Pupils*	*Median Chronological Age*
1	108	13-6
2	175	13-8
3	82	13-8
4	181	13-9
5	145	13-9
6	106	13-9
7	198	13-10
8	139	13-11
9	126	13-11
10	85	13-11
11	123	14-1
12	136	14-2
13	32	14-2
14	114	14-5
15	41	14-5
16	133	14-7
17	83	14-11
Total	2007	13-11

TABLE VI.

MEDIAN INTELLIGENCE QUOTIENT OF H-8 GRADE PUPILS

Schools Arranged in Descending Order of Median Intelligence Quotient.

February 24, 1930

(Intelligence quotients obtained from Terman Group Test of Mental Ability.)

Schools	*No. Pupils*	*Median Intelligence Quotient*
3	82	107
1	108	107
2	175	106
5	145	106
4	181	105
7	198	101
15	41	101
8	139	100
10	85	99
9	126	99
13	32	96
6	106	95
14	114	95
11	123	94
12	136	91
16	133	87
17	83	84
Total	2007	99

In a general way the schools are arranged in reverse order in Tables V and VI in accordance with the well-known fact that the brightest pupils are usually the youngest pupils and the dullest pupils are usually the oldest pupils.

It will be noted that there is considerable difference between the median chronological age in School No. 1 and in School No. 17, and that the pupils in School No. 1 are the brightest and that the pupils in School No. 17 are the oldest and have the lowest median intelligence quotient.

The theory of classification which has been accepted by the Secondary Principals' Conference and approved by the Superintendent, the separation of pupils into ability sections in the various schools, the diversification of educational offerings and the adjustment of instruction to the needs of individual pupils are all tending to break down the condition noted above and a considerable change has been effected in the last several years.

It is not necessary, and probably it is not desirable, that the pupils in Schools No. 16 and 17 should be the same age as the pupils in Schools No. 1 and 2, but it probably is desirable to somewhat narrow the gap in age betweeen them, and through the very fine coöperation of the principals in the various schools this purpose is rapidly being accomplished.

Summary

1. The Terman Group Test of Mental Ability, Form A, was given to all pupils in the H-8 grade during the week of February 24, 1930.

2. The median chronological age for the grade is compared with the Oakland standard below:

Grade	*Median C. A.*	*Theoretical Standard for Grade*
H-8	13-11	13-8

For the first time the grade as a whole may be said to be at age. The theoretical standard for the grade is thirteen years and eight months, with a three months' variation allowed on either side. This would put the range from thirteen years and five months to thirteen years and eleven months, and the median chronological age is exactly at thirteen years and eleven months.

3. If the extremes are considered, the chronological age spread is quite large, but the range of the middle 50 percent of the class is very reasonable, being only one year and three months. In other words, the ages of 50 percent of the class are between thirteen years and four months and fourteen years and seven months. This is shown below:

Grade	*Range*	*Range in Years*	*Middle 50 percent*
H-8	11-3 to 18-3	7	13-4 to 14-7

4. The median mental age for the class is slightly below the Oakland standard and is given below:

Grade	*Median M. A.*	*Theoretical Standard for Grade*
H-8	13-10	13-8

5. The total range of the mental age distribution is very similar to that of the chronological age distribution, and the range of the middle 50 percent is rather narrow, being approximately two years:

Grade	*Range*	*Range in Years*	*Middle 50 percent*
H-8	10-3 to 18-3	8	12-9 to 14-11

6. The median intelligence quotient for the class is 99, with the lower quartile at 89 and the upper quartile at 110. The distribution is practically normal, and the intelligence quotient of 99 is within one point of what would have been expected, as very little selection has taken place before the H-8 grade in the Oakland public schools.

The median intelligence quotient for the Spring semester, 1928, was 97; in 1929 it was 100, and for the present semester it is 99.

7. The lower quartile of the class is at 89, which is within one point of the theoretical boundary between "Y" and "Z" sections, and as far as intelligence is concerned approximately 25 per cent of this class should be in "Z" sections.

8. It is also interesting to note that the upper quartile is exactly at the theoretical boundary between the "Y" and "X" sections, and that one-fourth of the pupils in this class have intelligence quotients that are equal to or exceed 110. The limit below which satisfactory college work cannot be done is often set at this point, and if this statement be accepted, 500 of these 2000 pupils should be guided toward the college and the university and 1500 toward other lines of work.

9. In Tables V and VI the schools are ranked in order of ascending median chronological age and descending median intelligence quotient, and taken together furnish an estimate of the relative ability of the pupils in the various schools to do public school work.

ERADICATING ANCIENT METHODS IN MODERN LANGUAGE TEACHING

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MODERN foreign languages, as they have been "taught" in our colleges, and especially as taught in secondary schools, form the most perplexing subject in their curricula.

Many systems have been tried, from grammar-translation to the "all-foreign-language" and "direct" method, but all fail to enable more than about 10 percent of the pupils—even after three years—to converse with, or even understand foreigners, or to translate simple newspaper matter.

President Rufus B. von KleinSmid, at a recent luncheon of the Modern Language Association of Southern California, held at the university of which he is president, said: "The language teaching system which has made its way into our schools is as illogical as it is difficult to eradicate. We must set more definite and logical objectives in our teaching, since in the future the influence of Americans in international affairs is bound to be in direct relation to their ability to speak foreign languages."

Many other prominent educators also are pointing to the ruts in which education still moves and are predicting a new order that will sweep away classroom practises that have repressed the minds of all pupils but those of superior talent and perseverance.

In the near future all teachers will really be guides, directing children from infancy to college through fascinating laboratories, libraries, uniquely equipped foreign language departments, supervised playgrounds, laboratories of hygiene and food study.

Demand for Languages. This article is to give an account of a long struggle to break away from conventional teaching habits in the foreign language classroom. Fifteen years ago the writer was teaching French and Spanish at the Polytechnic High School in Santa Ana, California. Spanish had become popular everywhere. There were not half enough instructors

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* Mr. Chamberlin passed away September 16, after an active summer's vacation devoted to the improvement of methods in modern language teaching. In speaking of Mr. Chamberlin's work as a teacher of modern languages in the Santa Ana schools, Superintendent John A. Cranston says:

"Mr. Chamberlin was an indefatigable worker, an enthusiastic and successful teacher who sought new ways of breaking away from the cramping influences of traditional methods. Whatever teachers may think of the methods developed by Mr. Chamberlin for the teaching of modern languages, he was successful in teaching children to speak Spanish and French. His adult classes in the evening school were equally successful. It was noticeable that enrollment in the evening classes increased during the term instead of decreasing, as so frequently occurs. When the term was over many of the adults in his evening classes met in groups to continue their study of a speaking knowledge of Spanish. It was also noticeable that, when Mr. Chamberlin's pupils passed from the junior high school to the senior high school and entered contests in Spanish they usually won first place."

to be found to teach the overcrowded classes. Latin and ex-German teachers, with little or no knowledge of Spanish, were drafted to help teach these masses of unclassified children. The I. Q. had not then been introduced into many high schools.

Discouraged with the poor results of the old regime, and believing that more pupils should make a better showing at the close of a year's work, the writer tried many experiments to arouse interest. Improvement was slow or even doubtful. Could the Winnetka or the Dalton books have come our way we would have had some guidance. But those helps were not yet in print.

After about three years of trial and rejection of many devices to "compel" attention to duty in class, and to "reward" home study—interesting, but the wrong stimuli—there came the pleasing news that experiments could be tried in the seventh and eighth grades. The junior high was established that year. Here were loose chairs and tables; here were minds not seriously affected by the adolescent period.

The Dalton Plan Book. In the junior high school setting there was more space for charts and creative materials. Miss Parkhurst's book, now out, though saying little of foreign languages, showed us what a high school could do on a laboratory basis, and the Wynnetka books, though not for foreign languages, encouraged us and widened our vision. We were now getting away from the false stimulation of music, clubs, and regalia as basic material. We were creating a better mechanism for the assignment and development of lessons. We were finding that the more talented members could be trained not only to "get" their own assignments with high grades but have time left to coach, drill, and even examine the others.

Some New Permanent Devices. We were slowly developing a "point-earning" and marking custom and were finding that objective tests could be worked in with a "high-point" grammar test in such a way that all were delighted and satisfied that marks earned were free from personal estimates of the teacher. After years of experimenting we found that most of our devices could be discarded. A few seemed to have come to stay, such as the "post office," "home study registration," the "composite divisor" and the "parents' voucher." Besides giving to pupils business terms in Spanish, they teach economy of time, system and business habits. These are described later.

The main features of our socialized program in several Spanish classes and a general language class are here given, together with the score sheet on which each pupil keeps a record of the points earned between tests. To this is attached a parent's voucher which may be signed by relatives as well as parents to show that pupils are studying aloud ***at home***.

NAME

JOHN DOE

SCORE SHEET

EXTRA POINTS FOR DIVISOR

Pupil records below all points earned. Teacher marks penalty points on other side, on day of test. Dec. 12

PTS	HOW EARNED
10	Cuento (169-70)
4	Ejer 172 -- 8
1	173
2	174 - — 4
2	175 - — 4
15	Cuestionario 30
8	atención
12	En casa
10	Tema
15	Tema 20
8	Tema, Pg.
41	"Loud" at home
128	66
	128
	194

VOUCHER

To Language Teacher:

This certifies that

JOHN DOE

NAME

has read aloud in my hearing, the foreign language on page 169. No. of times, 4

SIGNED

Post Office, near entrance, for filing corrected test papers, written work, etc., in folders or large envelopes. Pupils, on entering, take these envelopes to their seats, leaving the pigeon holes empty. The monitors know whom to mark absent by inspecting the boxes after tardy bell.

Entrance Drills, carried on as pupils enter and for two or three minutes after tardy bell. *Closing Drills,* two or three minutes before dismissal.

The Score Slip, for extra points earned in class or at home or in study hall. This includes all worth-while things a student can do to aid him in preparation of his assignment for the week. On this sheet he credits himself with "points" for time spent, reading foreign text matter in the presence of home folks, the translating of volunteer exercises, or anything else that will help him to reach the goal set for his *Track.*

The illustration on the left shows the style of score slip we have used for two years. One column for figures representing points earned and the wider column for memo of how earned. This slip is turned in on test days with test paper showing total of extra points earned. The boy whose slip is shown earned 194 points. These are added to his *Test Divisor* by the teacher, minus any penalties.

The Test Divisor. This is a figure representing a total value of words, idioms or other features in a test to which a definite worth can be given, thus eliminating favoritism or guess-work by the teacher when marking errors, or by children after trading papers for marking. To this number is added the points from a pupil's score sheet, described above. The number of points representing the values of errors in a pupil's test is divided by this composite divisor. The number we get shows his percentage of "error" and must be subtracted from 100 to find his grade in percent. For instance, if the test is worth 300 points and John

earns 160 extra, his "divisor" is 460. If he has 78 points in "red pencil" marks on his test paper, we divide the 78 (78.0) by 460, giving 17 percent error. Subtract this from 100 and we get 83 percent for his standing for the week. This is entered on the *Public Score Chart,* where the grades of all the classes are kept for half a year.

Public Score Chart. On this is kept in rows the marks of pupils by classes. At the end of four months it is filed. Monitors transfer from the test papers the marks after each test. Great excitement prevails the day after a test as pupils hurry into the room and up to the chart to see what grades they earned and to compare them with their own and their partners' previous grades. For the next twenty minutes or half hour pupils scatter about the room correcting their mistakes from a correct test written on the blackboard or a large sheet of paper. When all are corrected, the pupils hear each other go through the test orally until every mistake is rectified. As each one does this to the satisfaction of his partner, both go to the chart and raise their grades one, two, three or more percent, according to a scale affected by the "track" on which pupils are working.

Penalties. These are points (listed on a chart) which must be taken from a pupil's score on the day of test. They are needed to hold in check those restless spirits who have to learn to respect the rights of neighbors and get down to business on one "track" or another. Loss of points seems to hurt more than demerits in a school under the merit and demerit system.

Sketching Over a New Assignment. This is an interesting feature, and is done by the teacher unless there be a very talented member of the class who can come forward and explain the high points in the work of the coming week. "Points" and "penalties" for attention and non-attention are given, or, taken rather, by each pupil as this twenty-minute exercise is carried on. Following the "sketching" comes either a regular test or a picture-talk extemporaneous program.

Picture Talks. One of the photographs accompanying this article shows a spirited program in full swing. A girl has just described her picture and is being bombarded with questions about it. Everybody in the room takes notes in Spanish while this is going on. Each pupil talks as fast as he can for from one to two minutes. So great is the excitement, and so eager is everyone to come forward to deliver his speech (written or off-hand) that this novel feature seems to hold great values. A written speech is not worth as many points as the extemporaneous.

The Foreign Language Problem. This laboratory or activity program that we have instituted at the Willard Junior High School is by no means the final solution of the "illogical teaching system" as President von KleinSmid has well designated our present recitation custom. We believe we have made a start towards a natural, socialized program where children can learn by activity and in partnership groups, and whereby better stimuli for outside study may be established. This matter of finding a

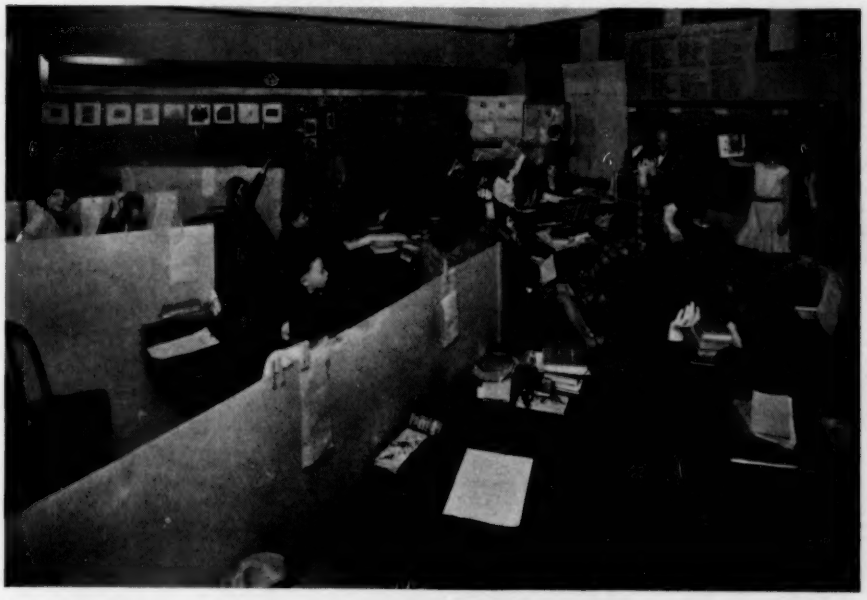
uniform system of getting large numbers of children to grasp the syntax and vocabularies of strange tongues is an enormous problem which calls for the united efforts of foreign language teachers.

Service Centers for Language Teachers. We need a different approach, a different set of tools than anything that the "direct" method has furnished. Language tools must be made by the pupils themselves while in a joyful, dynamic atmosphere—never while sitting passive or repressed. Language teachers will have to meet at central places as clearing-houses, frequently, to discuss their problems, even leaving their classes one or two days a month under the direction of assistants. To meet three or four times a year for luncheons, and hear speeches on classics and foreign music, does not help the mass of pupils who are getting ready to fail or to pass on in ignorance of the living values of the language studied.

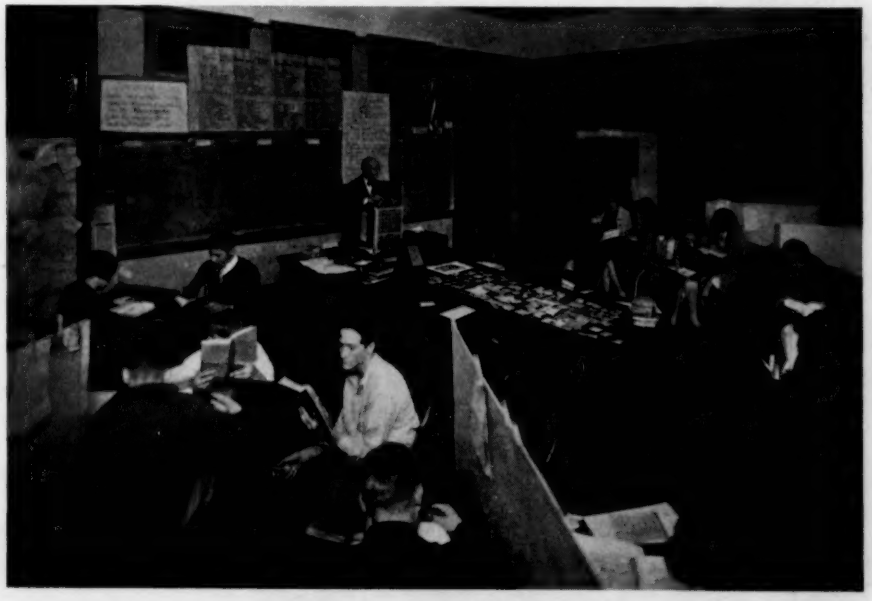
Fifth to Seventh Grades May Be Best Time to Begin. This wonderful new "core-subject," as Miller calls modern foreign languages in his work on the *Self-Directed School,* has unfathomable riches in carry-over contacts for other subjects in our schools. If Americans are to become linguists in the new age just ahead when animosities and jealousies between nations have given way to reciprocity and mutual understandings, we shall have to reorganize our classrooms, and doubtless we will find it well to begin in the fifth or sixth grade. There the minds are pliable and the throat and mouth muscles are easily trained to pronounce the foreign words. After nearly twenty years teaching in secondary schools I am convinced that we are doing wrong to spend money in trying to teach large numbers of children refractory foreign languages during the adolescent period.

As the constructive supervised playground has come to supplant the fifteen-minute recess of the little red school with its bullies and fights, so the day is close when modern languages, instead of being a second-fiddle subject, attainable only by a few so-called language-minded pupils, will become a core-subject along with English, and will form a background for it, much needed to make our own language more interesting than it now is to the majority of American children.

Starting thus early, our young men and women finishing high school and college with a speaking and classical knowledge of several languages will be welcome in foreign lands to assist in the modernization of cities and farms, in educational and industrial pursuits. With a practical knowledge of foreign languages we will overcome the old jealousies and hatreds which prevailed when mountains and rivers were enough to separate peoples of differing languages into hostile camps.



Low 8 Spanish class conducting a picture talk. The girl standing at front-right has just completed her talk and is being bombarded by questions from the class. The beaver-board partitions used in this laboratory experiment, separating groups when they are at their study or in recitations with leaders, are shown on left.



Low 9 Spanish class in booths, working out exercises in their Spanish books, preparing for reports and demonstrations before the close of period. Language laboratory table in center; post-office near entrance.

ALAMEDA HIGH SCHOOL'S UNIQUE TROPHY

JULEAN ARNOLD
Commercial Attaché, United States Department of Commerce

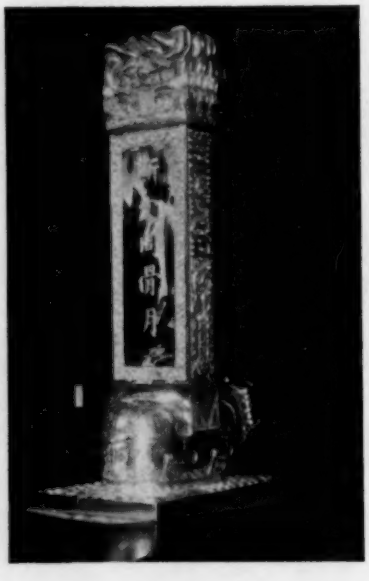
The graduating class of December, 1929, of the Alameda High School hurdled over all conventional ideas of presentations to their Alma Mater and lit upon the unique idea of sending to far-away China for something which would label the presentation of that class as distinctively original.

After Commercial Attaché Julean Arnold addressed the students of the high school in the Autumn of 1929 on America's relations with China, a committee of the graduating class, after a conference with Dr. George C. Thompson, the Principal, made representations to Commercial Attaché Arnold to secure for their class an artistic Chinese silver trophy to serve as an annual debating trophy to encourage a more intelligent interest in America's relations with the Far East.

The trophy was conveyed from China for the school by Judge Milton J. Purdy of the United States Court for China, who was met by a special committee representing the school when the President Lincoln arrived in San Francisco harbor on September 17. Attaché Arnold has furnished the following description of the trophy and its motif.—EDITOR'S NOTE.

RETURNING to Peiping—the great cultural center of China—I visited the various places of historic interest and finally found among the thousand-year-old cedar trees in the courtyard of the famous Confucian Temple a stone tablet which would serve excellently as a model for the silver trophy as desired.

Of the score or more of stone tablets in the beautiful park surrounding the Confucian Temple, the one that was particularly selected as a model carries an inscription which is a reproduction of a dissertation by the famous Emperor Chien Lung on China's great sage, Confucius. Chien Lung was one of the most noted of emperors through the entire history of China and ruled approximately during the lifetime of George Washington. The stone tablet which carries this inscription is about fifteen feet high, six feet wide and two feet thick. It is a huge slab of marble mounted on the back of a legendary animal resembling a tortoise. It is housed in a beautiful pavilion open on four sides and covered with a roof of bright, deep yellow, glazed tiles.



Stone tablets are supposed to have been in use in China as early as 2000 B. C. in connection with the performance of sacrificial rites and for inscriptions. Before the invention of paper, characters were printed on silk and for preservation carved on stone. After the Han Dynasty, 206 B. C. to 221 A. D., stone tablets were commonly erected on the premises of palaces, temples, mausolea, along roadsides, and

in other public places to narrate events leading to the erection of the buildings or monuments before which they stood, and for the purpose of recording meritorious acts of kings, princes, public officials, and others, as well as for the preservation of the writings of famous persons or scholars. To a certain degree this custom still obtains in China.

The stone tablet generally consists of three parts, the head or superstructure, the body, and the base. In this particular case we may add a fourth part, the foundation, as some of them also have a special type of foundation. The head usually comprises a double or treble set of dragons entwined about a central plaque upon which are inscribed two seal characters, often significant of the inscription on the body of the tablet.

The dragon, the chief of the scaly animals because of its ability to expand and contract, signifies adaptability and in Chinese mythology is considered one of the four sacred animals. It possesses the power to raise clouds and produce rain for the benefit of all creation. For this reason the Dragon King is worshiped in time of droughts with special prayers for rain. In the *Canon of Changes,* one of the Five Classics, the dragon is taken to represent the king or emperor, and later in Chinese history it was interpreted to represent great men as well. According to tradition the dragon design is used for the head of the tablet, as stone tablets are generally erected either by imperial decree or with th permission of the ruler and because they carry inscriptions descriptive of manly, princely, or godly attributes. There is a huge ball which in reality represents a pearl. Generally the dragon is featured with a pearl some little distance beyond his mouth and showing him in the act of striving for it.

Around the face of the tablet is a border of dragon-like figures. These are supposed to represent one of the nine offsprings of the dragon and typify a fondness for learning. On each side of the tablet dragons emerge from the water, ascending to the clouds.

The base of the tablet generally consists of a tortoise-like animal known as the "pi-hsi" (pronounced bee-shee) which, according to Yang Shen in his work "Wai Chi" is the one of the nine offsprings of the dragon which typifies a fondness for carrying heavy burdens or assuming great responsibilities. Thus, like the dragon, this tortoise-like animal is also a mythological creature.

The foundation upon which the tortoise rests represents in the main water, and on each side of the foundation mountains arise from the water. In this foundation the waves of the sea and the rocky mountains arise from the water. As further typifying the water you will note in each corner a species of fish—one an ordinary fish, the second a lobster, the third a crab, and the fourth a turtle. The "pi-hsi" is in reality a water god, depicted as a tortoise-like animal. For this reason he is shown as rising from the water.

The silver replica is an exact reproduction in miniature of the original except for the characters inscribed thereon. It measures twenty-four inches in height, is two and one-half inches thick, and its base measures eleven and one-half inches by eight inches. The face of the silver replica bears the inscription

PRESENTED
to the
ALAMEDA HIGH SCHOOL
by
THE CLASS OF DECEMBER, 1929
to serve as
an
ANNUAL DEBATING TROPHY
to encourage
A MORE INTELLIGENT INTEREST
in
AMERICA'S RELATIONS
with
THE FAR EAST

The back of the tablet carries five Chinese characters taken from the Chinese classics and which translated into English read "Men of Learning are Brothers."

EVOLUTION OF ELEMENTARY PLANE GEOMETRY

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INTRODUCTION. The meaning of the term "Euclidean Geometry" may be accepted in its usual broad sense to cover all the logical structure built upon Euclid's assumptions and limited to a consideration of constructions possible through use of straight edge and compasses only. On the other hand the term may be restricted to those phases only which were included in Euclid's *Elements*. It is the latter of these definitions which will be used in this report as the basis of distinction between the content of the geometries of several ages and countries.

Content of Euclid's Elements. It would be impossible with any pretense of exactness to say that Euclid himself was the originator of most of the proofs incorporated in his *Elements*. However, there has been sufficient evidence uncovered whereon to grant him the title of the "Great Geometer" in that he was the first mathematician wholly to divorce mathematics from philosophy and that he was the first to collect, organize, systematize, and present a logical treatment of plane geometry. His *Elements* covered more than the field of plane geometry but did not step out of the domain of mathematics. A list of the topics included in the content of the *Elements*[1] is here given: Book I—Rectilinear Figures; Book II—Geometric Algebra; Book III—Circles; Book IV—Problems about Circles; Book V—Proportions; Book VI—Problems about Proportions; Books VII, VIII, IX—Arithmetic; Book X—Irrationals; Books XI, XII—Solid Geometry; Book XIII—Regular Solids. The first six of these books, with the exception of Book II, have become the basis of modern plane geometry. Book II, which is geometric algebra, has been replaced by a purely algebraic treatment in the form of identities such as $(a+b)^2 = a^2 + 2ab + b^2$ or $(a+b)(a-b) = a^2 - b^2$.

Origin of Geometry. Simple geometric facts have apparently been recognized in all civilizations from the earliest recorded times. The Chinese, Hindus, Babylonians, and Egyptians previous to 3000 B. C. have all left evidences of recognition of common geometric forms such as the circle, triangle, rectangle, and square. Thinkers among these peoples independently formed rules for finding the areas of these figures—often mere approximations, but nevertheless rules which showed an appreciation of intrinsic relations existing in the figures. The rules were developed empirically and were of interest to their originators only because of their practical applications. The Greeks, in their pursuit of purely intellectual

[1] Sir Thomas L. Heath, *The Thirteen Books of Euclid's Elements.*

development, divorced geometry entirely from its field of applications and elevated it to the position of one of the highest goals of intellectual attainment. In that form geometry was a subject to be attempted and mastered only by men of mature years and developed powers of logical reasoning. For such men Euclid wrote his *Elements* at about 300 B. C.

Influence of Euclid's Elements. The decadence of Greek culture and the consequent slackening of interest in the development of mathematics in that country left a period of several centuries barren of progress in mathematics. During this period the Arabs made a zealous attempt to absorb the culture of the Greeks and succeeded in transcribing or translating the best Greek works. However, they added little or nothing of an original nature in the field of mathematics. Thus while Greek mathematical works were disregarded almost to the point of extinction in the continent of their origin, they were being preserved, through the medium of Arabic endeavor, for future scholars.

The Romans were not particularly interested in intellectual development as an end in itself, so they disregarded almost entirely the Greek accomplishments in pure mathematics. Though they had access to the finished products of Greek intellect the Romans ignored the logical considerations there to be found in the field of geometry and made use of but a few rules of mensuration whose exactness did not exceed that of rules evolved and used by the Egyptians hundreds of years before the Greeks perfected their system of geometry. The earliest extant geometry in Latin is known as the geometry of Boethius (c. 510 A. D.). Boethius translated from the Greek edition by Theon and seemingly tried to restore the *Elements* in their original form. Boethius was mistaken, however, in crediting to Theon the proofs of all propositions, and in that portion of Boethius' geometry which has been preserved there are but a few definitions and a number of enunciations with accompanying diagrams. This geometry had an extended use in Western Europe during the Dark Ages. The wide acceptance of this sketchy, inexact presentation of geometry is strong proof of the Roman's lack of interest in pure mathematics.

One of the earliest complete translations of the *Elements* into Latin (c. 1100 A. D.) is credited to Athelard of Bath, an English monk, who made his translation from an Arabic edition which he found in the care of Arab scholars in Spain. The same source is believed to have been used by Campanus, whose manuscript appeared in 1260 A. D. and became the basis of many later translations and editions. It is interesting to note that these two important copies came indirectly through the medium of Arabic translations rather than directly from Greek works. Translations from Greek works were undoubtedly made, but those which have been preserved are inferior to the translations which came through the Arabic.

The fall of Constantinople (1453) resulted in an influx of Greek and Arabic texts in Italy and Central Europe. The invention of printing at about the same time was a great aid to the re-awakening of interest of scholars in mathematics. The geometric figures presented a difficult prob-

lem to the early printers, but the year 1482 saw the first printed edition of a geometry, the Ratdolt edition of Venice. Thereafter editions appeared at not distant intervals. The first English edition of the *Elements* was presented in 1570 by H. Billingsley, Lord Mayor of London. This edition, like the best of the Latin editions, is a translation from Arabic sources. A bibliography published in 1887[2] listed nearly two thousand editions of Euclid's *Elements* alone, and an edition in English of the *Elements,* published in 1928, is prefaced by an historical discussion wherein the matter of the number of editions is disposed of thus: "Their name is legion, and their object mostly that of adapting Euclid for school use."[3]

Place of Geometry in the School Curriculum. A brief survey is here made of the influence of Euclid's *Elements* as reflected in the editions of the *Elements* which have appeared. Another interesting phase in the history of geometry is the tracing of geometry's place in the school curriculum. As has been stated above, in Greek schools knowledge was sought for its own sake. Purely intellectual pursuits were ranked far above utilitarian interests. Scholars who attained to any degree of eminence in mathematics were mature men with backgrounds of long years of study. For such men Euclid prepared his handbook, the *Elements,* embodying the basic concepts of his time, tersely, concisely, logically, and completely arranged. It has also been noted that the Romans invested little thought in matters of purely intellectual appeal. The church schools, the outstanding schools of the Middle Ages, included geometry among their studies, though the content of the geometry offered seems to have been limited to the memorizing of a few definitions and rules of mensuration. The fact that the geometry of Boethius was widely accepted as a text is evidence of the limited content of the courses.

For hundreds of years geometry was considered to be purely college curriculum material. Geometry in the Middle Ages was still considered to be one of the high goals of scholarly attainment, yet intellectual development had been so barren of progress in mathematics that the content of the courses offered was very meager. The University of Oxford in the thirteenth century, the University of Prague in 1384, the University of Vienna in 1389, and the University of Paris in 1452 all had stated requirements that candidates for degrees must read the first six books of Euclid.[4] It seems certain, however, that few students read beyond the fourth proposition of Book I—the fifth proposition of Book I deriving its name, "Pons Asinorum," from the difficulty students found in it.

The universities continued to offer geometry for several centuries after the revival of learning in Europe. It seems strange, in view of the far-reaching developments of the mathematics of today, to think that less than a century ago plane geometry was considered a proper college subject. The seventeenth and eighteenth centuries in Europe saw a growing tendency to place geometry in the secondary school curriculum. The

[2] D. E. Smith, *Teaching of Geometry.*
[3] Sir T. L. Heath, *The Thirteen Books of Euclid's Elements.*
[4] W. W. R. Ball, *Primer of the History of Mathematics.*

nineteenth century there saw geometry quite generally conceded to be a secondary school subject. It was well along in the nineteenth century before England recognized geometry as a secondary school subject, and the American schools were yet more laggard in shifting geometry from the university to the secondary school level. Harvard University, founded in 1636, had no mathematics entrance requirement and offered geometry in the last year of the college course. In 1787 the same university lowered the place of geometry to a second-year offering. The Phillips Exeter Academy included practical geometry among its offerings as early as 1799,[5] the academies being the earliest American secondary schools to offer geometry. During the period 1814-1828 the Latin Grammar School introduced geometry into its curriculum and the Girls' High School in Boston first offered geometry in 1826. However, it was 1843 before geometry began to be required as a college entrance subject, at which time it was so listed in the Harvard University catalog. By 1875 geometry was firmly established as a college entrance requirement and, therefore, as a secondary school subject. By 1912 every university in the United States making a subject entrance requirement other than English required algebra and geometry.[6] Since 1912 there has been an increasing tendency to shift some portions of the content of geometry to a still earlier place in the school program. The results of this movement up to 1923 are quite fully summed in the report of the National Committee on Mathematical Requirements.[7] In this report is recommended an early introduction of students into intuitive geometry, suggesting offerings in the junior high school mathematics to cover a treatment of areas and perimeters of simple rectilinear figures, circumference and area of the circle, easy constructions using compasses, T-square, and triangle, drawing to scale, and recognition of geometric forms in nature, architecture, and industry. It is now customary to offer a standard course in plane geometry in the tenth grade of the senior high school.

Present-day Content of Plane Geometry. The same report[8] recommends that plane geometry be offered in the senior high school to cover congruent triangles, perpendicular bisectors, angle bisectors, arcs, angles, and chords in circles; parallel lines with related angles and parallelograms, angle sums in polygons, secants and tangents, regular polygons, similar figures, areas and numerical computations, loci, constructions, informal treatment of incommensurables and limits, use of motion in the study of angles and in the relating of groups of theorems, and exercises offered as both introductory and practice material.

The relation of Euclid's *Elements* to plane geometry as defined in the foregoing report will now be considered. What materials covered in

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[5] Alex. Inglis, *Principles of Secondary Education.*

[6] Florian Cajori, *History and Teaching of Mathematics in the United States.*

[7] *Report of the National Committee on the Reorganization of Mathematics in Secondary Schools,* Part I.

[8] *Report of the National Committee on the Reorganization of Mathematics in Secondary Schools,* Part I.

this recommendation were included in the first six books of Euclid's *Elements?* What reorganization of materials has taken place? And what has been added in the nature of new materials and treatment?

Perhaps the most striking differences between the geometry of the Greeks and present-day secondary-school geometry lie in the considerations of mensuration and in the algebraic development of many phases of the subject. It has already been mentioned that the interest of the Greeks lay in purely intellectual development, so it is not surprising that they completely avoided numerical treatment and considered mensuration as improper geometric procedure. Modern texts are almost wholly extensions from the *Elements* insofar as they develop formulas for areas of rectangles, squares, triangles, parallelograms, trapezoids, and circles. These texts depart widely from Euclidean practice in providing exercises to be solved and in making practical applications of the formulas as derived. The comparisons of areas of similar figures and the study of loci also form extensions from the *Elements* of Euclid.

The propositions which Euclid offered as "Elements" have been quite generally embodied in modern texts, though in very different organization. The admittance of hypothetical constructions has greatly simplified many proofs and has made possible the many differing sequences offered in modern texts. Euclid limited his organization by requiring that every figure whose properties were studied be first shown possible of construction. Not until Legendre, in France, published his geometry (1794) was there any noteworthy attempt made to offer a sequence differing radically from that of the *Elements.* It was Legendre's text, which made use of hypothetical constructions, that paved the way for modern texts in elementary geometry.

Page Architecture in Geometry Texts. The page architecture in the geometry texts as exhibited in modern books is of recent origin. The original *Elements* offered all proofs in essay form with figures used for demonstration drawn at one side and partially surrounded by statements of the proof. References to authorities for steps in the argument were usually omitted, but where given were quoted in full and embodied in the paragraphs of statements. Steps in the argument continued in unbroken sequence from the enunciation of the proposition, and the demonstration ended with a restatement of the enunciation. Think of the difficulty a student in a modern high school would encounter if asked to follow such a demonstration. Contrast with this description the page architecture of modern texts. Here a complete demonstration appears on one page, as does every demonstration in the text; the figure is set plainly before the eye, not confused by being set amid statements of the proof; the description of the figure is clearly and independently given and the enunciation repeated in symbols with reference to the figure drawn. In addition to these features, each step of the argument, concisely expressed through the use of symbols and abbreviations, begins a new line, and the authority for the step is referred to in the margin, though often a hint to the reference is given in a parenthesis immediately below the step of the proof. These

changes to the present type of page architecture were not gradual, but began with the texts by G. A. Wentworth in his *Elements of Geometry*, of which the first edition appeared in 1879.

Geometric Exercises. The greatest and most significant changes in modern texts have been in the field of applications of geometric principles, in the mensuration and inductive approach to establish the reasonableness of a statement before formal proof is required, and in the inclusion of original exercises to be demonstrated by the student. Early geometries had full demonstrations of theorems with no exercises suggested to the student as tests of his own ingenuity at devising proofs or as applications of the principles he had proved. The following table will give a picture of the growth in the number of exercises included in several American texts. (Cajori gives 1784 as the date of what is probably the earliest American edition of Euclid, and in his description makes no mention of any supplementary materials therein.)

TABLE SHOWING RELATIVE NUMBER OF EXERCISES IN TYPICAL GEOMETRY TEXTS*

Author	*Date of Publication*	*Number of Exercises*
Davies, Charles	1851	45
Loomis, Elias	1878	134
Wentworth, G. A.	1880	120
Wentworth, G. A.	1880	479
Wentworth, G. A.	1899	613
Wentworth-Smith	1910	917
Hart and Feldman	1912	1039
Palmer and Taylor	1915	1270
Hawkes-Luby-Touton	1920	992
Smith, D. E.	1923	847
Hawkes-Luby-Touton	1929	1415

Of the books listed in the above table, the first two introduced exercises as purely supplementary material not designed to aid in the development of new work or to give immediate application for the purpose of fixation of proved principles. Wentworth's text of 1879 introduced a new feature in the matter of exercises. He scattered the exercises throughout his work so as to "afford an effectual test of the degree in which he (the student) is mastering the subjects of his reading," [9] and to develop in the student the power of independent or original demonstration. So popular did this phase of the work prove, that it was necessary to enlarge this feature of the text and to make new plates for the printing of the book within ten years.[10] This gave Wentworth an opportunity to revise and expand his former text, and as is evident in the above table he embraced the opportunity to increase about four fold the number of exercises. The demand for more exercises continued and the table shows the increases made. The text last named in the table includes exercises for two purposes: they introduce new principles and proofs to the student

*These texts should be considered simply as *typical*, as a number of the texts published since 1920 contain large numbers of exercises.—EDITOR'S NOTE.

[9] G. A. Wentworth, *New Plane Geometry* (1880).

[10] G. A. Wentworth, *New Plane Geometry* (1888).

before these are formally presented, and they offer drill on old materials. This is a feature distinctly different from the texts which only made the exercises follow directly after the theorems they illustrated or grouped the exercises as supplementary materials at the conclusion of the books.

Modern Extensions in the Field of Plane Geometry. Many modern ideas have developed in the field of geometry, such as systems or pencils of lines; principle of duality; generation of figures by motion; a separate geometry of the triangle; a separate geometry of the circle; paper folding; the study of inscriptible polygons; the proofs of the insolubility of trisecting an angle, doubling a square, or squaring a circle; but few of the extensions which have thus been made have been within the scope of secondary school minds. The field has been extended in more abstruse and highly specialized channels, yet the place of plane geometry in the school curriculum has been steadily shifted from higher to more and more elementary levels. This condition makes it seem doubtful that much will be attempted in the matter of broadening the basic content of plane geometry, though the influence of some of the new phases may with profit be reflected in the development of portions of plane geometry.

Summary. Geometry, in name at least, has had some place in the school curriculum of every country since the time the subject was logically developed and systematically organized by the Greeks about 300 B. C. Copies of the *Elements* of Euclid in varying degrees of exactness show an unbroken continuance of recognition of the *Elements.* The geometries for hundreds of years were merely attempts at a faithful reproduction of Euclid's *Elements.* The content of Boethius' geometry, the earliest Latin edition, was meagre and inexact; the Campanus manuscript (1260 A. D.), a Latin edition translated from the Arabic, became the source for many later translations and editions. Legendre's geometry (France, 1794), departed widely from Euclidean form and procedure, and paved the way for modern texts. The Wentworth text (United States, 1879), effected drastic changes which made of geometry a sensible and possible subject for secondary school pupils. It has been comparatively recently that secondary schools were conceded the right to include plane geometry among their offerings. The many inventions and discoveries in mathematics have so broadened the field that it has become essential so to select and organize the elements of plane geometry as to make a suitable secondary school offering, even introducing many of the facts in the form of intuitive geometry in the junior high school offering.

Such an organization makes possible the quick assimilation of many elementary principles and gives a basis for practical applications of easy geometric principles. It also gives an easily acquired foundation for those students who wish to extend their studies into the more highly specialized and abstruse fields of mathematics. The place and content of plane geometry is not a closed question. There is no certainty as to what effect extensions in the advanced field will have on elementary geometry as taught in secondary schools. The above report is but an attempt to consider the content of secondary school geometry in view of its evolution.

MOTION PICTURE STUDY—AN ENGLISH PROJECT

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THE writer has made an interesting experiment in an English course with a class of high junior pupils of superior intelligence, an "X" group. The principal of the school suggested that the English course ought to equip the students to judge intelligently the merits not only of the novels and short stories which they read, but also of the motion pictures which they see, and especially of the latter because the motion picture supplies a greater portion of the entertainment of the public than does recreational reading. He further suggested that an investigation be made of books on the subject, obtainable at the State Library, and that these books be borrowed for classroom use.

Topics of Motion Picture Production Studied. The investigation was made and about forty books were requested for two weeks. The subject lent itself naturally to division into the following topics, each sufficient for one or two students to investigate and report upon: photoplay plots and sources, the scenario and synopsis, the elements of story and drama, costumes, stars, directors, comedies, art, music, distribution, motion pictures abroad, photoplay magazines, talkies, censorship, motion pictures in education, cartooning, screen advertising, the theatre, films and the camera, acting, the history of the motion picture, and tricks of the screen. Choice was permitted, so that the student most interested in music chose music, and so on. Each was furnished a bibliography for his topic. Several of the students were not satisfied to confine themselves to the State Library collection, but investigated current magazines in the city library and at home. One student brought most of her information from a motion picture costume designer; her subject was costumes.

Reports Made and Discussed. After a few days reports began to be offered; then each day thereafter a part of the one-hour period was devoted to reports and the rest to research. The students were vitally interested and enthusiastic. Some of the best reports were given before the principals and the head of the English department, all of whom encouraged the work most generously. When the reporting was finished, the class listed the points which they considered necessary to cover in judging the merits of a motion picture. Then each wrote an essay on "Judging a Motion Picture." Finally one picture, then being shown, was chosen for criticism, and nearly all the class attended it. The criticisms were written, the best parts of which were read aloud in class, serving as the basis of a most interesting discussion.

Pupils' Reactions on the Project. The sponsor feels that the two weeks were well spent. Some of the comments of the students will show their reaction to the project:

a. The acting was very good on the part of every actor, especially the prosecuting attorney. I think that everyone in the house hated him before the picture was through. He made the suspense all the worse with his terrible questions and accusations. Relief: It was a relief to me when the camera turned on the reporters. I think the picture would have been a little heavy without them to furnish a laugh here and there. I should not have noticed any of these points two weeks ago unless the picture were especially poor in everything that goes to make up a good motion picture. These two weeks' study did not lessen my pleasure in this picture, but I imagine that in a less interesting play I should keep thinking of what I had learned in these two weeks and should probably not enjoy the picture as much as if I had not studied motion pictures. This, however, would be benefiting, as I should tell other people it was uninteresting and they would not go. If everybody did this, it would soon behoove the producers to put better and more interesting pictures in circulation.

b. Two weeks ago I would have disliked the prosecuting attorney just as much, and would have loved the little old grandmother just as much, but I wouldn't have thought why my feelings were thus. I wouldn't have thought that costume, facial expression, and trivial details of manner and custom were necessary to make the character complete, nor would I have thought how the actors worked hard to make me like them or dislike them, as the case may be. I didn't think much about pictorial composition or about plot, etc. If one of these wasn't quite right, I merely said that I didn't like the picture. I didn't stop to think what particular thing it was I didn't like outside of the actors and costumes. I believe that since the last two weeks of study my pleasure in motion pictures has been increased, because my mind and eyes are aware of certain details of plot, suspense, acting, and pictorial composition that I didn't notice before.

c. I think, since the motion picture is a popular form of entertainment, that everyone should know how to judge a good picture. It is even more important that the public be taught to judge motion pictures than to be taught to judge literature. There are a great many people who seldom, if ever, read books. On the other hand, there are very few people who do not see a movie at least once a month. There are several ways of teaching the public to judge motion pictures, but the most thorough by far is in the school. I believe that it would be very successful if it were taught in the English course, either in the freshman or sophomore year of high school, thus giving the student the knowledge when he has come to the age that he can really begin to enjoy a good motion picture. It is a very enjoyable subject, and one that should be completed before a student graduates from high school.

Benefits Are Literary, Social and Civic. The benefits from this study seem to have been three-fold: literary, social, and civic; *literary,* from the standpoint of vitalizing for the students the elements of drama and story, of affording these prospective college students a taste of research, and of prompting self-expression, both written and oral, founded upon facts which they wish to share; *social,* in the interchange of ideas in class discussion; and *civic,* in that the students are awakened to the virtues and evils of a most important social factor in the community, and have formed a taste for the best in this form of recreation.

If this study, on a simpler plan, were a part of the course in English for each high school student we should soon have an American public more intelligent and discriminating in its patronage of motion pictures. The result probably would be a raising of the standard both of the taste of the people and of motion pictures.

INTERCOLLEGIATE AND INTRAMURAL ATHLETICS IN THE JUNIOR COLLEGES OF CALIFORNIA

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THIS study is an attempt to discover *what is being done* in the promotion of intercollegiate and intramural athletics in the junior colleges of California. So far as is known nothing of this nature has been attempted before, and it is the purpose of this report to consider the conditions as they are so that a comprehensive view of the whole may be had by those actively engaged in this phase of education as well as others interested in the athletic development of the junior colleges.

It will be well to bear in mind that the junior college is, comparatively, an infant in the educational family even though its legal birth dates back more than twenty years in California. It is generally defined as an institution of higher education which gives two years of college work.

Types of Junior Colleges. Roughly, the California junior colleges may be classified in two groups: (1) public, (2) private. The public junior colleges may be further divided into three types: (1) district, (2) high school, (3) State. There is but one of the State type at the present time.

Method of Obtaining Information. The questionnaire method was employed in obtaining the data used as a basis for this study, although the authors have a personal acquaintance with a large number of the physical educators promoting the programs in these schools and are familiar with many of the problems confronting these men and women.

Colleges Supplying Information. Our original mailing list consisted of the thirty-three public junior colleges and twelve private junior colleges. Of the twelve private schools listed replies were received from only five, and of these one was strictly a woman's college while two reported they had no athletic activities. Only two private junior colleges, therefore, have furnished complete reports relating to our special field of study.

We were more fortunate in our response from the public junior colleges. Of the sixteen district type, thirteen returned our questionnaire, while eleven of the sixteen high school type supplied us with data, as did the one State junior college.

Division of the Report. This report is divided into two sections; that dealing solely with the intramural athletics and that concerned with the intercollegiate sports.

For purposes of clarification it might be well to state that this study does not deal with the regular physical education program which is a requirement by State law of all public junior colleges. That this requirement has an important bearing on both the intercollegiate and intramural programs cannot be denied, neither will there be an attempt to deny or camouflage the fact that there is a great deal of overlapping in the actual carrying out of the program of what is considered physical education, intercollegiate athletics and intramural athletics.

Intramural Sports

Intramural sports are classified as those activities promoted within the walls of the college among its own student body as contrasted with the extramural, or more commonly known intercollegiate sports, participated in by students of different institutions.

Mass athletics was an outgrowth of the war. The idea that everyone should play and not just a select few quickly spread in educational institutions. It is the chief purpose of this phase of the study to discover to what extent this idea has been practiced in the California junior colleges.

Analysis of Replies. The answers to each of the questions submitted in the questionnaire have been analyzed, and will here be discussed in turn.

	Yes	*No*
1. *Do you have a regular program of intramural sports?*	19	7

In other words, 73 percent of those replying reported they were promoting intramural sports. While it must be admitted there were some qualifications to these replies, that some of the directors reported handicaps and limited programs, nevertheless the fact remains that they are indicating progress in this direction.

2. *Who promotes the intramural program?*

Athletic Director	Full-time Assistant	Part-time Assistant	Students
16	5	3	6

In some cases more than one is involved in the promotion of the intramural program. An example of this is found in a report that lists the athletic director and a student manager responsible for the program.

3. *How much is your budget for intramural sports?*

Number colleges	11	4	1	1	1	1
Amount	Nothing	Something (not specific)	$50	$90	$150	$1000

The amount expended for the promotion of an activity usually has a direct bearing on the results obtained. Athletic equipment is expensive. To furnish for large numbers basketballs, volleyballs, footballs, nets and other supplies costs money. Some replies indicated an interchanging of equipment. That is, equipment purchased for intercollegiate teams was later diverted to intramural groups, usually when it is practically worn out. If there is any athletic fund at all it would be good policy to set aside a definite portion of it for intramural use. This will not only encourage the promotion of intramural activities but lends a freedom of action on the part of those conducting "intramurals" that is conducive to better results. It is interesting to note the wide range in the amount expended in the various junior colleges of California for intramural sports.

	Yes	*No*
4. *Is your intramural program part of the regular physical education program?*	12	7

This question furnishes the key to the method of working the intramural program into the day's order of activities. While intramural activities are generally considered as voluntary sports free from the compulsion of re-

quired physical education there is much to be said in favor of promoting it as part and parcel of the regular class work, especially where facilities are limited, the staff is small, or the director must devote his after-school time to intercollegiate coaching.

	Yes	*No*
5. *Is the intramural program conducted after school hours?*	13	6

Two schools indicated that they conducted the program both during and after school hours.

The most popular activities were found to be basketball, track, playground ball, and tennis. The limited time in school periods does not suffice to meet the demands for these sports with large groups. Consequently, we find the periods from 3 to 6 p. m. and in many cases, during basketball season, early evening hours, devoted to intramural games.

	Yes	*No*	*Both*
6. *Is the intramural program voluntary?*	14	4	1

If the intramural program is attractively presented and has a strong appeal, then it should draw to it voluntarily large numbers. The only justification for the apparent contradiction with the replies to Question 4 seems to lie in the fact that many schools giving intramural activities as part of the required program offer such a variety that pupils may voluntarily select the type of activity they desire to play. Strictly speaking this could hardly be called voluntary. This question apparently caused some ambiguity, as the answers would seem to indicate.

7. *What is your unit of organization?*

The keynote of success in any mass activities program is organization. Units, or groups that exist naturally within a college, are more likely to prove advantageous to a healthy athletic program than manufactured groups. The following list indicates the units employed for organizing intramurals in the California junior colleges.

Unit of Organization	*Number of Colleges*
Interclass	10
Division of gym class	7
College departments	3
Living groups	3
Age, height, weight	2
Dormitory division	1
Clubs	1
Geographical	1

Some colleges use several of the above units.

	Yes	*No*
8. *Do you have a group point scoring system?*	10	9

One school reported that it planned to put such a system in operation next year.

Such scoring plans tend to enliven the interest, hold the groups together and foster keener competition. Certain designated sports, usually seasonal in character, are planned to spread over a semester, quarter, or school year. Points are generally awarded for entering a team and for placing among the leaders. If a chart is kept where all students may watch the progress of the teams, added interest and enthusiasm will be developed. To one who is familiar with the extraclerical work and detail involved in checking and scoring the groups the above figures are indicative of favorable progress in this direction.

	Yes	*No*
9. *Do you have a system of awards?*	17	4

When there is a star at which to shoot, a goal to reach, or a prize to win there is no question but that this added incentive appeals to most of us and we will play with greater zeal to win the award. To the boy who is not

able to qualify for his college varsity team and earn his letter there is still an opportunity to gratify that desire by successful competition in intramural sports.

10. *Types of Awards Given* — *Number of Schools*

Letter	13
Sweater	4
Numerals	3
Medals	3
Plaques	3
Cups	2
Ribbons	1

The above figures indicate that the prizes most popular are those with the least intrinsic value. This may be due partly to the lack of funds for more expensive awards, but more than likely it reflects a truly amateur spirit permeating these sports.

11. *Underscore the activities you promote and add any others not mentioned on our list.*
The range of activities and their popularity may be gleaned from the following:

Activities	*No. of Schools*	*Activities*	*No. of Schools*
Basketball	21	Speedball	5
Tennis	19	Cross country	4
Touch football	16	Soccer	4
Playground ball	14	Boxing	2
Baseball	13	Wrestling	2
Swimming	12	Tumbling	1
Football	11	Gymnastics	1
Volleyball	10	Fencing	1
Golf	6	Jiu Jitsu	1
Handball	6	Horseback	1
Horseshoes	6	Pentathlon	1
		Mass athletics	1

12. The following is a list of answers best describing the reason why no intramural program was promoted in certain junior colleges in California. The figures following the answer indicate the number of times these reasons were given in the replies: (a) lack of assistance 7, (b) lack of funds 4, (c) time occupied with coaching 2, (d) time occupied teaching required physical education classes 1, (e) lack of facilities 1, (f) competition with high school 1, (g) lack of students 1, (h) lack of time 1, (i) bus system 1.

The above answers are self-explanatory. None of them are objections that cannot be overcome. *Time* will iron out many of the factors causing hardships in this early stage of development of a program of "sports for all" in the junior colleges of California. The future looks bright with a promise of competitive sports for all who are physically qualified to participate.

Intercollegiate Sports

By intercollegiate sports we mean those activities participated in between colleges. The purpose of this section of the report is to ascertain the extent of participation in athletics between junior colleges and the approximate costs, also the number of men in the various sports, their organization, and the facilities for promotion. The questions will be discussed in order in which they appeared in the questionnaire.

Analysis of Replies. This analysis is based on the replies from twenty-eight junior colleges in California. There are twenty-three full-time and seventeen part-time coaches, or instructors.

1. *Underscore the following sports in which you have intercollegiate competition:*

   Football 15, Basketball 16, Baseball 14, Track 14, Tennis 14, Soccer 2, Golf 5, Crew 1, Swimming 2.

   This would indicate that there are five sports in which most of the colleges have intercollegiate relationship.

2. *What is your total budget for intercollegiate sports?*
   Eighteen of the junior colleges reported having a budget for intercollegiate athletics. The smallest amount was $100 and the largest amount was $7000. The average for the eighteen junior colleges reporting was $1950. The total amount spent was $35,100.

3. *How much of your budget comes from:*

   a. Student body fees.....83 percent or $29,133
   b. Gate receipts.....15 percent or $5,265
   c. Other sources..... 2 percent or $702

   This would indicate that outside of the student body there is not much support of junior college intercollegiate athletics.

4. *Underscore the physical equipment you have:*
   Gymnasium 25, Locker rooms 23, Shower baths 24, Football fields 22, Baseball diamonds 24, Swimming pools 15, Tennis courts 21, Running tracks 18, Practice fields 11, Golf courses 2.

   Some of the above equipment belongs to high schools and is used by the junior colleges. This arrangement is not always the most satisfactory for the junior college because of conflicts in hours for practice and games.

5. *Do you compete in an organized league or conference?*
   Seventeen junior colleges do compete in an organized association. The various organizations listed are:

   a. California Coast Conference.
   b. Southern California Junior College Conference.
   c. Southern California Junior College Conference, East Section

   The above conference organizations have a total membership of twenty-eight institutions, five of which are not junior colleges. The different conferences now have established rules of eligibility for all junior college competition in the State which will allow them to play off intersectional games if they desire.

6. *Write in the space after each sport the number of students on each squad.*
   The following graph will illustrate the comparative popularity of the various sports from the number of participants in each. Football has nearly twice as many men participating as has basketball, its nearest competitor. Basketball, baseball, and track are about equal in the number of men.

   Football, basketball, baseball, and track may well be called the major sports by right of their popularity from the standpoint of number of participants, the amount of money involved, the physical equipment in use, and the interest displayed by the student body and the general public.

   Of the minor sports, tennis is the most popular, with swimming next.

Number of Men in Junior Colleges Participating in Sports

Football	671	Swimming	141
Track	370	Golf	59
Basketball	366	Soccer	55
Baseball	326	Crew	20
Tennis	179		

7. *What school authority is responsible for the administration of the conference organization?*

The figures indicate the number of institutions which assign the following men to the administration of the conference: dean 7, athletic director 11, coach 8, athletic committee 1, vice-president 1.

There are two men from each institution at all meetings of the conference. Usually one of these men is a coach and the other is a faculty man outside the department of athletics. This arrangement seems to work out satisfactorily to all concerned. A man not connected in any way with sports is more apt to have the institution as a whole in mind than is the man who is coaching. Often both representatives are members of a committee or board that govern or control athletics in their own institution.

8. *Does the State Department of Education assist in conference organization?*

During September, 1928, a meeting was called by the State Department of Education and held at Fresno, to which were invited representatives of the various junior colleges in California. It was decided at that time to definitely divide the State into three junior college conferences, namely, Southern, Central and Northern. Each conference selected two representatives to meet with the State director of health and physical education as a "research committee" of seven members to study and report on questions of uniform eligibility requirements, State play-offs and like problems. This organization is now functioning and hopes to settle many of the problems which have more or less handicapped advancement.

9. *Underscore the word which best describes the patronage or support as indicated by attendance on the part of the*

Student body.....Poor 6, Fair 6, Good 9, Excellent 1
General public.....Poor 8, Fair 9, Good 3, Excellent 0

Seemingly the patronage at junior college games is not good, as is shown in the answers to Questions 9 and 3.

10. *State briefly any handicaps you have encountered in junior college athletic competition.*

The following reasons are given as being drawbacks in the promotion of intercollegiate athletics:

1. Small school
2. Poor officials
3. Lack of coaches
4. Lack of grounds
5. Outside work by athletes
6. Only two years
7. Best athletes go to four-year school
8. Lack of competition
9. No money
10. Poor equipment
11. Students lack ability
12. Students and faculty have no interest
13. Conference schools too far apart
14. Lack of public interest
15. Location makes it hard to get games
16. Lack of time on field
17. First year of competition
18. Dodging high schools
19. Lack of school spirit
20. Lack of uniform eligibility
21. Lack of candidates
22. Same campus with high school
23. Lack of unity
24. Poor scholarship
25. Lack of games
26. Too close to big games

From the many handicaps listed it would seem that the promotion of intercollegiate athletics has been rather hard, but from the number of activities promoted, it would indicate the keenest kind of interest on the part of the students of these institutions and also that intercollegiate athletics are a vital part of college life.

REPORT OF THE STATE COMMITTEE ON THE RELATIONSHIP OF ATHLETICS IN CALIFORNIA TO PHYSICAL EDUCATION*

THIS statement confines itself to the relation of physical education to athletics under the following heads:

1. The relationship in general theory.
2. The relationship in the local school.
3. The relationship in the county or district units of the California Interscholastic Federation.
4. The relationship in the State.

Inasmuch as our athletic program is almost entirely for boys, the distinctive problems of girls' physical education are not discussed.

1. *Physical Education and Athletics Are Related in General Theory.*

While the objective of physical education is not the production of athletes, or the fostering of competitive athletics, both are inevitable by-products. Since the program seeks vigorous bodies and sustained health as its major endeavor, and as its minor the development of the social attitude in a highly competitive society, it devotes itself of necessity to the correction or lessening of physical defects and to the systematic expression of physical vigor under socially competitive conditions. It follows closely that the tools of the program, aside from the more or less technical, formal, and individual remedial measures demanded by physical defects, will be physical play; play that is organized, and therefore social; play that is competitive, and therefore preparatory for vocational conditions in American life.

Hence, the content of physical education courses will be mainly the games that have justified themselves in actual athletic rivalry or that give promise of doing so.

This use of athletic games is not only the best physical education practice yet evolved, but has a constructively vital relationship to athletics.

Including, as it does, the entire male student body, it reaches all possible material, and uncovers all talent, known and unknown, whether possessed by boys of retiring disposition, who would be unlikely ever to appear under a purely volunteer system, or by boys of the opposite type, who, if they could, would monopolize attention and honors.

Since the activities schedule for a year covers all known feasible sports, all boys have wide choice and may work for physical symmetry at the same time that they are learning the rules and the patter of the various games and acquiring the elements of skill in their performance.

Furthermore, those who have physical deficiencies are protected against their own misplaced ambition and the inconsiderate importunities of sport enthusiasts and school team "boosters."

Participants learn by precept, by illustration, and by experience what competition means: its spirit, eager striving under rules protecting the interests of all; its process, alert and instant recognition and intelligent seizure of opportunity; and its results, victory rewarding superior endowment or persistence or effort, and other rewards proportioned to comparative excellence.

Success in competition, whether vocational or avocational, requires the expenditure of effort regardless of inclination at the moment. Nowhere, perhaps,

*In submitting this report the Chairman of the Committee states: "The report itself was largely written by Mr. J. R. McKillop, but all of the members of the committee had a share in forming the conclusions."

is more effective training for this capacity given than in scheduled games, whose demands must be met at the appointed time.

It is evident, then, that athletic skill for the individual and athletic material for the school arise from the physical education classes.

2. *Physical Education and Athletics in the Local School.*

In the individual school, two phases or types of athletic activity at once command attention. They are: (a) the intramural, (b) the interschool.

The first of these, the intramural, is less spectacular and less troublesome, but essentially much more important. It is more important because, as an integral part of the physical education program rather than a by-product, it enlists much the larger number of pupils as participants. With its contests both free and frequent, it may have the larger number of spectators, especially of the students themselves, who may thus enjoy wholesome recreation in wholesome surroundings.

Though of greater volume than the inter-scholastic, the intramural sports are easier to administer because they are a part of the school activity and may be handled by the regular school machinery; because, too, they are free from outside interference; and because what little additional cost they involve is financed from the school budget.

If general spectator interest is lacking for these school games, a little sympathetic attention and fostering can bring it to parity with all but the most important of the interscholastic contests.

Finally, intramural sports are a part of the school program. It is not necessary to make a place for the games. They have a place as soon as the program is made and are therefore not supported on the time and at the cost of other school activities.

The interscholastic games have a somewhat different status, which is probably due to tradition, to their different objective, and to their commercialization. Even so, the foundation for them is laid in the physical education program, they are secondary to it in importance, and its interests must dominate. This domination must be evident in at least four regards, as follows:

a. In the selection of physical education directors. These must be first of all teachers, professional educators, acknowledging and practicing allegiance to the welfare of their charges, rather than to the production of cups and banners by champion contenders. Kings of sport are few, else they would not be kings; but pupils are many and should not be deprived of the necessary training that the public seeks to provide for them in order that a few kings may be regally crowned.

The physical education directors must be selected by the school itself, entirely free from outside interference, from the standpoint of the welfare of the school as a whole. It is a corollary that the physical education director must be supported entirely by the school. A chamber of commerce contribution, funds raised for a "coach" by enthusiastic "fans," or any other salary help from outside, are all inappropriate and may easily lead to disaster. Such money is offered for but one possible reason: to produce a winning team. Acceptance of the help is acceptance of the purpose.

Support involves control or a share, at least, of direction. This the school yields whether it wants to or not, whether it knows it or not, when it takes such support. The director becomes in fact a coach and looks for his ideals and orders to the place where he looks for his money. Sportsmanship is subordinated, the team must win; the school schedule cracks, the team must be accommodated; eligibility rules are circumvented, the team must have material. Permission of outside help in such matters is an urgent R. S. V. P. invitation to trouble.

b. The interests of the physical education program must dominate in the disposition of time. The director's program will be devoted principally to his classes, the rank and file of boys, good, bad and indifferent, ath-

letically, but each one possessed of a body and entitled to physical preparation for a lifetime of vocational endeavor. No one will gainsay the right to a lifetime of sports to Tyrus Cobb and Hans Wagner and other professionals; or to Bill Tilden and Bobby Jones and other amateurs, but they are not typical of the boys that throng our halls, neither does their occasional emergence justify turning over the school system to an effort to discover their successors.

Of questionable propriety, too, is the custom that has grown up in some places of observing what is little more than a four-and-a-half-day week, in order to give right-of-way to spectacular athletic contests.

c. There must be domination of the physical education program in the placing of emphasis. Otherwise, a warping of values results. Pupils choose their subjects and plan their programs with athletic convenience and accommodation as a first consideration. A highly vocal portion of the community appraises the success and progress of the school by the strength of favorite teams. A wrong perspective becomes ingrained habit with many pupils and remains with them for years after they leave the school.

d. In faculty relationships, the interests of the physical education program should have precedence over those of interscholastic contests. A system ceases to be democratic, a school ceases to be professional, as it disregards service in its distribution of special privileges in time and pay and prominence. A system approaches the ideal as it preserves in its principles and approximates in its practices the same degree of consideration for instructors confined to the comparatively drab academic assignments as it accords those who move in the light of athletic publicity.

3. *Physical Education and Athletics in the County or District Units of the California Interscholastic Federation.*

The question here is almost altogether a matter of administration, for the California Interscholastic Federation and County Leagues have nothing to do with the content of physical education courses or with either their relationships to other courses or to the production of teams. These district units are concerned with the competitive display of athletic prowess and are compelled to decide who shall administer that display. There are three obvious answers, namely, the pupils, the physical education directors, or the principals. If the process is to have the maximum educational and social efficiency, all three will have a part, but authority will reside mainly in one. Though we are here dealing with a by-product of the physical education program, it is a public and spectacular by-product, and directive responsibility must therefore fall finally on the group best qualified to handle it. This qualification will depend on training, on poise, on disinterestedness, and on knowledge of and thorough commission to, the valid objectives of such activities.

Pupils are immature, lack a sense of proportion, and are most interested in the immediate results of winning or losing. It is, therefore, not reasonable to turn over the control of inter-school matters to them. They will "learn to do by doing," but under direction, so that it will not become "learn to suffer by blundering."

How about the physical education directors? It is still true that too many of them are still "coaches." They think of themselves as coaches, that is, the producers of teams; they are addressed by their pupils as "coach," and they are known in the community by the same term. It is easy, under such circumstances, to exalt the production of winning teams at the cost of undue inroads on school time, of friendliness between schools, and of real sportsmanship. The last suffers when the rules are studied from the standpoint of the limits to which one can go in seeking advantage over an opponent or of methods that might be questioned but that are still within the rules.

The very nature of the work of the physical education directors makes them subject to the more insidious forms of commercialization, such as the

attraction of fees for officiating at games, the prominence in school life that accompanies physical prowess or the conduct of successful teams, and the temptation to use "outside" help in the training of an exceptional team. The principal is just as human a being as the physical education teacher, but he has broader objectives, else he would not be a principal. It is his daily function to know, feel, and adjust all interests of his school within itself, with the community, and with other schools. With him, rivalry is less likely to become bitterness or strife. It is therefore natural, as this committee sees the situation, for principals to sit at the levers and control the machinery of operation.

4. *The Relation of Physical Education to Athletics in the State.*

Every school in California is under the regulation of the State Department of Education. The California Interscholastic Federation was endorsed by the State Department of Education in 1914, acting through the agency of Mr. Will C. Wood, then Commissioner of Secondary Schools, who in that year issued Bulletin No. 2, entitled, *High School Athletics—A Plan for State-wide Faculty Control.* No school organization that does not regard its responsibility to the State Board of Education can long endure. It is the opinion of this committee that the representatives of the State Board and the Federated Council of the California Interscholastic Federation and the various section executive councils of the California Interscholastic Federation should work in harmony toward the greater unity of athletics and physical education. It is the opinion of this committee that such coöperative thinking can have nothing but a good result for the schools of California. On the other hand, it is the opinion of this committee that the State Department of Education should leave as many of the details of administration to the California Interscholastic Federation as it is possible to leave. Ours is a coöperative undertaking.

Special Conclusions of the Committee

1. In order that the State Department might cover all athletic activities in our body, the San Francisco and Oakland high schools should be members of the California Interscholastic Federation; that, in such an event, there might be such a reorganization of the federated council of the California Interscholastic Federation as would give to the North Coast Section and to the Southern Section increased representation on the federated council. It should be borne in mind, however, that the federated council members have always considered that they represented the State, and not merely the sections of the State.

2. The history of the control of athletics by the principals through the California Interscholastic Federation acting under the authority of and in coöperation with the State Board of Education is such as to not only justify the continuance of the present method of control, but is such as to recommend it very highly as the most nearly ideal organization that has yet been attained.

3. In the matter of increasing the number of sections in the State, the committee is of the opinion that such sections should develop from within present sections as the need therefor arises. There should be as much elasticity in the arrangement of schedules as is possible, and such elasticity cannot be secured unless the geographical sections are comparatively large. We are of the opinion that further sectioning, if it is desirable, should proceed within the four sections of the California Interscholastic Federation as now constituted, but that the present method of representation on the federated council should not be changed.

4. So far as the laws of California permit, schools should institute a program of medical examination of all competitors before they engage in either interscholastic or intramural sports.

Respectfully submitted,

C. B. Moore, C. W. White,
A. A. Bowhay, Curtis E. Warren,
J. R. McKillop, R. B. Leland,
H. A. Spindt, *Chairman.*

A NEW TYPE OF COLLEGE TRAINING

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STUDENTS accept the kind of public school instruction that is about. When administrators and compilers of questionnaires declare that junior college students crave only those courses which equip them for still more college, schoolmen are ignoring the fact that in our tax-supported institutions the adolescent is given no chance for any type of organized work above the twelfth grade other than the academic and pre-professional. That this does not satisfy is attested in the withdrawal by their sophomore year of 200,000 of the 300,000 freshmen in American colleges and universities, and by the circumstance that the greatest enrollment in business colleges is of high school graduates. Young Lindberghs leave our universities and seek elsewhere a special training in marketable skills.

Practice Must Square Itself with Theory. California public junior colleges are gradually accepting their right to offer "vocational courses conforming to occupational needs." Theoretical literature in this field has long recommended such curricula. There has been created a large vocabulary much used on paper and very little in practise. There is a curious "Hang-your-clothes-on-a-hickory-limb-but-don't-go-near-the-water" psychology in the volumes which describe these hoped-for trainings as "semi-professional," "terminal," "culminal," and as intended to train "non-commissioned officers for industry." When junior college occupational courses are successful, as they are bound to be as soon as brave daughters do go in the water, there will be commissioned officers of industry called "bosses" who will refer to their work at Alma Mater in some other term than "culminal." Then this new institution will have an Anglo-Saxon vocabulary which parents and the business world will comprehend.

The Smith-Hughes Act a Great Experiment. The most adventurous public school project of our times has been that vocational education sponsored by the Federal government under the terms of the Smith-Hughes Act. Experimentation along this frontier was prescribed by law, and the power needed for action was provided by Federal money matched by state money. The initial idea was indeed a courageous one, but the plowing, tree-clearing, and cabin-erecting that have gone on under this "educational homestead act" were safeguarded by the kindly paternalism of an opulent sire.

Doubtless had the public junior colleges begun their careers with similar financial fostering, our colleges of education would today be offering scores of courses in the science and art of occupational research and placement, and there would now be listed in the catalogs of the junior colleges themselves a fine array of "job courses."

Initiative Rather Than Money Needed. While more money is always desirable and generally useful, there has been no real need to await funds. It has long been possible to profit from the experiences of the Smith-Hughes schools and those still older vocational schools, the colleges of education, many of which began their service as normal schools. Both of these institutions point the way in their wise and efficient use of money for discovering what positions there are, where they are, and thereupon to place their graduates in those situations. Initiative and a realistic acceptance of old values in a new field are more necessary just now than are more funds. When the public junior college does what it can and should do, a grateful public will divert into public channels the money that its sons and daughters now spend in commercial schools, in experiments with gas-station selling, and in general floundering. Those who have encountered the Smith-Hughes coördinators—often there is one for each craft —or the personnel officer placing newly-minted teachers from a college of education, have viewed a little of the competent machinery of well-organized vocational placement. Some of the money that junior colleges will save by using the industrial plants, the counting houses, and the offices of their communities for school tools and laboratories must be spent on a competent personnel staff which will provide the findings upon which courses are inaugurated, enlarged, altered, and, when need be, abandoned, and will at the same time maintain the friendly contacts with many different types of business enterprises which, when developed and operating, will adjust students to modern needs.

The late Dr. Alexis F. Lange, Dean of the School of Education, University of California, said in 1918: *The junior college will function adequately if its first concern is with those who will go no farther, if it meets local needs efficiently, if it turns many away from the university into vocations for which training has not hitherto been afforded by our school system.*

Los Angeles Junior College Offers Semi-Professional Courses

In September, 1930, Los Angeles threw open the doors of its new public junior college, gallantly adopting this adventurous philosophy as its own. College preparatory courses are offered here as in all public junior colleges of the State, but the emphasis is put upon the terminal occupational courses. These appear first in the catalog and it is in description of them that there has been issued a handsome and alluring special pamphlet entitled "A New Type of College Training." Moses leading his people into the promised land could have no finer zeal than has Director William H. Snyder in this new enterprise. He is crowning an already useful life by moulding into enduring shape the first large public junior college in the United States to concern itself primarily with the business and industrial life of its locality. The onlooker is compelled to salute the progressive spirit of the Los Angeles school group which has furthered this undertaking.

In an incredibly short time the old campus and buildings of the University of California at Los Angeles were purchased and a teaching staff

secured. During the first term there registered at the college 802 men and 603 women, and during the second term 994 men and 712 women. At the end of the second term, of the total enrollment of 1438 students, 303 were certificate students and 1135 were semi-professional. Of the semi-professional group 732 in all were eligible to apply for permission to become transfer students—that is to enter a course that would, if successfully pursued, bring them into the college preparatory group. Of these 732 only 252 did so apply. These figures are interesting as showing the kind of education students will take when it is about.

Since the second term, a research and placement administrator has been attached to the school, and the work of this personnel office has already revealed a number of occupations of junior college level which are part of the economic activities of the locality. Four of these vocations will be briefly outlined because each one illustrates a type of approach to the curricular problems of any city college in a populous area.

Course for Secretarial and Laboratory Assistants. The course to equip young women to be secretarial and laboratory assistants to physicians and dentists was arrived at, after the statistics were secured, with the aid of the Los Angeles County Medical Association and the Los Angeles County Dental Association. These professional societies appointed able committees from each unit which, separately, and then jointly, formulated a tentative course of study that suited their common needs. Their joint committee met then with the Director of the junior college, the personnel secretary and the members of the faculty who will be teaching the students concerned, and here a final course of study was agreed upon.

It is essential that the business and teaching groups have occasional well-motivated meetings. At these gatherings the business man and the pedagog each learns what are the problems, the limitations, and the possibilities of the other. The school is here interpreted to commerce and the professions and some of life's realities are translated to the school. One important duty of the personnel office of a junior college is to supply laison officers between business and the seat of learning. When these twain meet much is accomplished for the adolescent, for the employer, and thereby for the community.

This particular course in Civic Health is a fair sample, then, of cooperation with organized professional societies whose sanction and hearty backing insure the placement of the graduates, an accessibility to timely statistics which will govern the number of students allowed to take the course, and current information regarding technological changes within the occupation.

Course in Banking and Finance. In surveying the work in banks as a possible field for young men, the contacts for curriculum building were made with the personnel departments of the banks instead of with the employers' organizations. The personnel men of the banks do the hiring for their firms and are close to the training of their beginners. The American Institute of Banking offers an in-service training to employees, and all the large Los Angeles banks give this work. These American Banking

Institute courses were found useful and were copies, in part, for the junior college course. An example of the value of round-table conference between business and school men occurred at the joint meeting over the course in Banking and Finance. The operation of the essential adding and bookkeeping machines had been placed by the college staff in the fourth and last term's work. The banking group suggested that it was not fair to students to leave this skill to be acquired so late in their training, because, in actual practice, the operation of these machines acts as an eliminative factor in the occupation. A more practical plan should permit the young men to discover early whether or not they liked this phase of the work. The good sense of this idea was apparent and the machine practise was then put into the first term's work. There are about four hundred bank beginners employed in Los Angeles annually. Promotion in this occupation after the second year is fairly rapid and growing more so since the rise of branch banking. It should be possible, with the cooperation now secured of the personnel officers of the banks, to place all graduates of the Los Angeles Junior College locally, in accordance with the standards set up, which criteria are described later in this article.

Course in Electrical Technology. The same contact was made with the personnel officers of the telephone company for initiating a course in electrical technology designed to equip men to work for that corporation.

Course in Civil Service. City colleges will find much of their community function realized in preparing young people for the thousands of positions in city and county civil service. In the city and county of Los Angeles there are twenty-five thousand classified civil service situations. There is a level of occupations here between the largest group, which is made up of unskilled, semi-skilled, and clerical workers—for whom grammar and high school education is sufficient—and the smallest group, consisting of physicians, nurses, engineers, chemists, bacteriologists and others requiring professional training of from three to six years. This middle ground includes a total of thousands of civil servants who are policemen, firemen, insect-pest and termite-control agents, playground directors, librarians, landscape and nursery gardeners. The training for many—probably all—of these officials as well as for other divisions not yet sufficiently investigated for discussion, should be the concern of a municipal college, which, tax-supported itself, should contribute to the improved training of its tax-supported civil servants. The scientific procedure of civil service departments, their beginning salaries, the promotional possibilities, and the pensions available in many of these employments are attractive.

In Los Angeles, policemen and firemen have an initial salary of $170 a month, which is better than the first check of the beginning school teacher. The retiring pension possible for a policeman after twenty years of service is half of the concluding salary. Since retirement may occur at forty-three years of age, a pension of $2000 is possible and $1500 commonplace for a man still young. The need of a better trained and educated police force is acknowledged. The University of Chicago is opening a police school this year, with August Vollmer, formerly of Berkeley and

Los Angeles, on their staff. There are ninety-six potential jobs a year available on the Los Angeles police force, and every succeeding civil service examination attracts more applicants who are college men. Mr. Vollmer writes that he considers twenty a better beginning age for policemen than is twenty-three, the present age for recruits in Los Angeles, and that the best police in the world, those of the London Metropolitan Area, commence their training at twenty. Civil service rules can always be altered when it is advantageous for a city to do so. The nine hundred forty-four graduates of a police school conducted in Los Angeles in 1924-26 under the direction of Mr. Vollmer raised the intelligence of the force twenty-two points. Crime detection rather than crime prevention is the intent of modern police systems, and training in the sociology, the psychology, and the economics needed can well be given in a public institution. That city college whose administrative problem permits of its offering the first good municipal police school will gain a unique fame and serve as a model for other junior colleges.

Course in Playground Directing. The civil service occupation for which training at the Los Angeles Junior College already prepares its students is playground directing. The program for this curriculum was made in coöperation with the Los Angeles city and county playground and recreational officials. Pre-service practice work with the local playgrounds will be part of the two years' training—an "interneship" to be served, as one of the playground directors aptly put it. Reports of the strengths and weaknesses of the student's practice work specifically stated on the Scott graphic rating scale will be sent by the supervising playground officials to the personnel office of the junior college, and this will be helpful for student success. Playground work is an increasing occupation both locally and nationally.

Training of Registrar's Assistants. The work of registrar's assistants and school clerks will prepare for positions in the offices of the Los Angeles public schools. The labor turnover and the new forces needed will be readily ascertainable. The specific training and the pre-service practice in the local schools should provide a superior office force for this occupation. The contact here was readily made with the head of the department that has charge of clerks for the Board of Education.

Standard to Which Occupations Must Conform

The standards to which occupations must conform before being adjudged as of junior college level are, briefly stated, the following:

I. There must be in the selected occupation a teachable content of knowledge and skill which will profitably engage the high school graduate's attention, without duplication, for two years beyond high school.

II. It should not be the purpose of public junior college to displace high school graduates by junior college graduates, but instead to discover and reveal the occupations in the community for which two years of college training beyond high school equips the worker.

III. Junior college courses must not conflict with courses pre-empted by public trade and part-time schools.

IV. The courses should prepare for occupations that:
a. Are not saturated locally or nationally.
b. Are growing in the number of annual recruits required.
c. Have a reasonable labor turnover and not one indicative of dissatisfaction.
d. Are socially and economically sound as regards:
   1. Satisfaction in the work itself.
   2. Satisfaction in the surroundings.
   3. Possibilities of advancement.
   4. Assurance of career.
   5. Prospects of income present and to come.

The five foregoing occupations—secretarial and laboratory assistants, banking and finance, radio technology, playground directing, registrar's assistants—are quoted as illustrations of the type of contact which needs to be made in order to inaugurate courses which conform to these standards.

Social Sanction of Vocational Education. The "social sanctions" of the academic world and of the business world are not the same. These will approximate each other as the school and the economic world meet. Most teachers, until a personnel office has collected and disseminated occupational statistics, have out-moded notions of the possibilities for careers. No group of people "make over" faster, though, in this regard than do school folk, probably because they have long been exposed to the educating influences of their students. Young men and women do not share the disdain that un-vocationalized teachers have of non-professional jobs, and of greasy overalls and grime. Every personnel officer is familiar with the pragmatic youth who correctly estimates his charm for his girl, not as he appears in his working clothes, but in his pay envelope possibilities for leisure-time enjoyments. Two modern heroes, Lindbergh and Tunney, rose to fame in occupations that few observers would then have rated high in academic approval.

Vocational Courses Broaden Occupational Opportunities. To obtain a position as a result of concluding one of the foregoing courses at the Los Angeles Junior College need not crystallize a young person's opportunities. The physician's and dentist's assistants have two office crafts. Instead of going to physician's or dentist's offices they may choose to enter the health department of the civil service, or to go to laboratories making use of the X-ray. The course in banking and finance can lead to work in insurance, in brokers' offices, in real estate, and in other allied vocations. The radio technologists may find their work with power corporations.

New Material Needed for Vocational Courses. It is already apparent that junior college teachers will have to rewrite many text books and to evolve a more suitable classroom procedure for their students than that now used either in high schools or universities. Further subjects, too, will be required. Already the need of attention to a study of human relationships is apparent. Psychological tests cannot yet accurately measure emotion, will, courtesy, tact. Colleges, nevertheless, must not neglect developing courtesy in their product. There is no reason why a junior college

student should not exemplify fine American manners, than which there are none better. Life today is not spent around tea tables and in drawing rooms; it never was for many people outside of the pages of fiction. Yet all of us are part of a world made up of automobile drivers and pedestrians, strap-hangers and conductors, bank clerks and customers, executives and subordinates, professional men and clients, teachers and pupils, rent collectors and renters, salesmen and buyers. We need to learn how to indulge in liberty, equality, and fraternity accompanied with consideration and grace. There is a teachable content here and the junior colleges may well apply themselves to the task of producing a "junior college manner," model A. This demeanor should not be conducive to the mirth or wrath that the once famed "Harvard manner" stirred, but should be based on a philosophy and a psychology that will tend to prevent both in social and commercial relations some of the shocks and jars of daily living.

Life's Work Not Limited to One Job. As time goes on, the use by junior colleges of local business places as laboratories for practice work in their training programs will result in discovering what occupational tests, if any, to use in selecting students. Probably no person capable of earning his livelihood is fitted for merely one situation in life. On whichever level of ability the worker is, there are many things that he can do. The factory girl may prefer to work where the job is colorful and the materials pleasing, even if the piece rate is lower than in uglier surroundings, but apart from her likes there are numbers of situations that she is capable of holding. Tests may determine which these are, but only occupational statistics will disclose where the openings are. The skillful surgeon might sometimes also be an artist or a railroad engineer, and the family exchequer may be the deciding factor in his choice. Work while in school will provide the try-out that is at present our most effective scheme of vocational placement. Giving the young person freedom of choice in a friendly environment to test his abilities in the business world is a fine and sound educational undertaking.

Around this public junior college movement will grow a scientific treatment of employment problems that will fit well into the increasing responsibility for occupations that is being assumed by the states and the national government. New York State is giving much attention and money to free employment bureaus for its adolescents, and the 1930 census will present all of us with an unusual amount of information about the gainfully employed. A few years of the thorough-going follow-up of placees which is planned by the Los Angeles Junior College will furnish data that will be invaluable to the community and to other junior colleges.

FAILURES AND COLLEGE RECOMMENDATIONS AS AFFECTED BY A MODIFIED ABILITY GROUPING

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IT HAS not been many years since small denominational schools, colleges, and even universities welcomed any and all students who were graduates of an accredited high school. Such a thing as requiring the student to have a certain number of recommending grades or to pass certain aptitude or intelligence test was unknown.

Since the close of the World War, however, enrollments in both our high schools and institutions of higher learning have increased by leaps and bounds until the present situation finds state universities over-crowded and the small college no longer in need of a field representative whose duty it was to go out and sell the small college to prospective students. In fact the small college is also over-crowded and is establishing entrance requirements.

Junior colleges have been able to relieve the university to a certain extent; still the situation remains acute, with the universities adopting higher and higher standards of scholarship, their only recourse in keeping down enrollments.

Raising standards of scholarship in the universities has forced the high schools to raise their standards in order that only the best of their students enter the university. The principal of a school failing to do this soon finds his school either on the "B" rating list or taken off the accredited list entirely. Such a situation has faced every high school principal in the State of California in the past four years.

The city in which the author of this article is engaged in school work is a wealthy community with a majority of the parents college graduates. It is only natural that they should want a university education for their children; yet the superintendent of schools was faced with the problem of sending only the best to the university.

The first plan adopted was an attempt at uniformity of grading, each teacher to give between 40 and 50 percent recommending grades. This plan was soon discarded, however, when it became evident that some teachers, regardless of the ability of the students in their classes, would be required to increase the percentage of recommending grades, while other teachers would be required to reduce greatly the number they had been giving.

Naturally the English department, where three years of English are required of every student in the school regardless of his ability, found it difficult to give as large a percentage of recommending grades as the more

advanced classes in Latin, French or mathematics where elimination and selection had taken place. Again, the commercial department found it almost as difficult to raise the percentage of recommending grades as did the advanced French, Latin, and mathematics classes to lower theirs.

At this point the superintendent of schools created a department of research within the schools, appointing the writer of this article head of the department, with one part-time assistant. Steps were immediately taken to solve the problem that had arisen owing to the raising of the standards of scholarship at the university.

The Test and Measurement Program

The first step in the solution was the working out and putting into effect of a test and measurement program. This particular school presented a virgin field, as up to the time of establishing the present department of measurements no intelligence tests had been administered and only a few scattered achievement tests given. The program has gradually developed from semester to semester until it has reached its present stage, as indicated in Chart I.

CHART I.

TEST AND MEASUREMENT PROGRAM

Test and Guidance	*Elementary Schools — Beach—Havens—Wildwood*													*Junior-Senior High Schools*									
	K	L1	H1	L2	H2	L3	H3	L4	H4	L5	H5	L6	H6	L7	H7	L8	H8	L9	H9	L10	H10	11	12
Detroit Int. Test..		X																					
National Int. Test						X																	
Terman Gr. Test..														X				X					
*Stanford-Binet	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Stanford Ach. Test						X							X				X						
Spen'r Arith (diag)										X													
Hotz Alg. Scales..																			X				
Class Range Int...														X	X	X	X	X	X	X	X	X	X
Classified Groups..														X	X	X	X	X	X	X	X		
Counseling														X	X	X	X	X	X	X	X	X	X

*Problem cases only.

An examination of this chart will show that there are critical points along the way from kindergarten through the twelfth grade, in which the testing work is accomplished. The only variation in this program is the tests administered to new students for the first time. Such students are tested immediately upon entering the school system, regardless of their location.

This chart not only indicates the type of tests and where they are given, but also shows a part of the use to which the tests are put. It will be noted that grades seven, eight, nine and ten are grouped for instructional purposes. Three grade schools within the city system with enrollment in each too small for grouping prevents classification below the seventh grade, while numerous electives and small classes prevent in like manner classification in the eleventh and twelfth grades.

Chart I also indicates where the chief emphasis on counseling is placed and also the grades and classes within the grades where the teacher is

given the range of ability for each class. More will be said of this later. This article, however, is particularly concerned with the handling of the recommending grade situation.

Facing the Recommending Grade Problem

For various reasons, educational and otherwise, it was decided to allow no teacher to have access to the individual I. Q. records, so a plan had to be devised whereby use could be made of available test data.

The plan was two-fold, *i. e.*, classifying the students for instruction in the grades indicated on Chart I, and giving to all teachers in the junior and senior high schools the range of ability in each of her classes in terms of data obtained from intelligence tests.

Classification for Instruction

Grades grouped for instruction were divided into two to four sections, the basis for such classification being mental age, chronological age, character traits, physical development, teacher's ratings, achievement test scores, and intelligence quotients. A parent cannot accuse the school of classifying the students on a basis of intelligence alone, as some of the highest I. Q's are found in the slower sections. Such students are exceptions to the rule, and they are placed in the slower sections owing to some character trait or poor foundation in preceding school work which prevents them from doing the type of work required of the faster sections. After all, the I. Q. record indicates the "possible" rate of learning of a student and not what he will certainly achieve. Considerable weight is given to mental age, teacher's ratings, and achievement test scores in the classification of students.

Chronological age does not play so important a role in classification and promotion as does the degree of physical development. An attempt is made to keep the children adjusted socially; for example, a large sixteen-year-old boy does not fit in with a group of small twelve-year-old pupils; neither does a small twelve-year-old pupil fit in with a group of sixteen-year-old students. In other words, the physical development of the child plays a great part in his classification and promotion.

No X, Y, Z Sections

The classified groups are not labeled as X, Y, Z sections, nor as superior, average, inferior sections. The research department assigns these students before the semester starts, calling in many for consultation. The result is that on registration day the student body, divided into small groups, reports to various rooms for registration, where a completed or nearly completed program card is handed to each student, who immediately reports to his next semester classes. Where pandemonium used to reign supreme in halls and main office for several days following the beginnings of a semester, now a short period is needed for registration.

Range of Ability to Each Teacher

At the beginning of the semester teachers are given class enrollment forms for their several classes. The teacher lists the names of the students

on these forms and returns them immediately to the research department. Here the individual I. Q.'s are placed opposite each name.

The entire student body is then divided into five groups according to their I. Q's, in order to correspond to our five-point marking system, as follows:

I. Q.	*Marks*
119-157	1
105-118	2
90-104	3
84-89	4
70-83	5

Such a grouping follows rather closely a normal distribution curve.

The class enrollment records of each teacher are then applied to the above distribution. For example, Miss Smith has an enrollment of twenty-three students in her first period class as indicated on Chart II. It is found that there are no students in this class with I. Q's between 119-153, which means that there are no students in this class capable of making "ones" as indicated in Chart II. Five students were found with I. Q's between 105-118; hence five students are capable of making "twos" as indicated on Chart II. Sixteen students in this same class had I. Q's between 90 and 104; hence, as indicated on Chart II, sixteen students are capable of making "fours."

CHART II.

CLASS RANGE OF ABILITY

SEMESTER (2) *Teacher:* MISS SMITH

Grades	*Periods*						
	I	II	IV	V	VI	VII	VIII
1	0	....	1	....	1	2	13
2	5	....	10	....	18	9	15
3	16	....	12	....	4	16	0
4	2	....	3	....	1	1	0
5	0	....	3	....	0	0	0

Examination of Period VIII shows, however, that thirteen students had I. Q's between 119-153, and it is indicated on Chart II that this teacher could give thirteen "ones," and in the same manner it may be inferred that she could give fifteen "twos," with no "threes," "fours," or "fives." A card similar to Chart II is given to each teacher at the beginning of each semester and the teacher can tell by looking at this card the range of ability in each of her classes and plan her semester's work accordingly. For example, on examination of Chart II one readily sees that Period VIII is a superior group in every way and an enriched course of study should be planned. Period I indicates just the opposite, a slower group for which a course of study should be mapped out requiring only the minimum essentials.

Specific instructions are given to each teacher as she receives the above card indicating that the card is merely a guide indicating the range of ability in each class and not to be followed slavishly.

CHART III.

DEPARTMENT FAILURES OVER A PERIOD OF THREE YEARS

Percentage of Failures

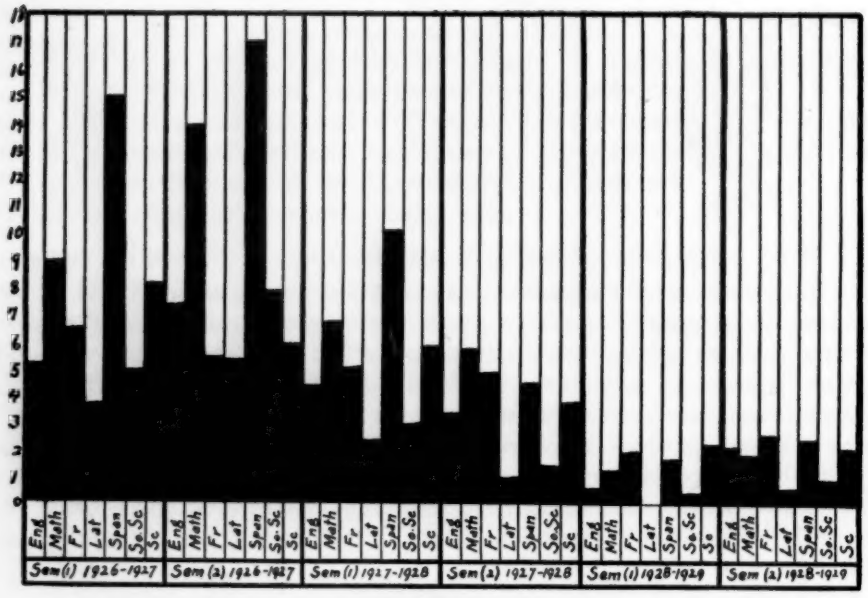
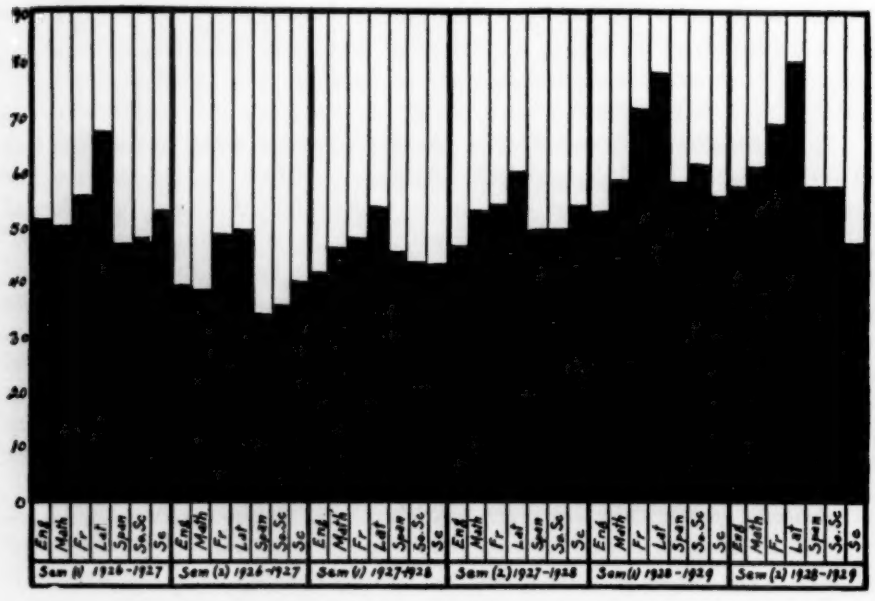


CHART IV.

DEPARTMENTAL RECOMMENDING GRADES OVER A PERIOD OF THREE YEARS

Percentage of Recommending Grades



Counseling Program

Hand in hand with classification and range of ability in each class goes the counseling program, and if proper coöperation is obtained from the counselors, the latter becomes one of the strongest points in the whole system.

The student body is assigned in three groups for counseling, one group to the Dean of Boys, one to the Dean of Girls, and one to the Vice-Principal. Knowing the levels of ability of the students, the counselors follow closely each quarter's marks of the students in their group. Those students who have fallen below their level of achievement are called in for consultation. The mere fact that some one is interested enough to call them in for consultation has produced a good effect upon the individual and has resulted in an increase of from 50 percent to 70 percent on the all-honor-roll of the 119-153 I. Q. group of students.

Results Over a Period of Three Years

Over a period of three years in which the plan has now been in operation the percentage of failures has dropped from as high as 17 percent in some departments to an average of 2 percent, with no department giving more than 3 percent. Chart III shows the percentage of failures in seven departments in the school by semesters for a period of three years. An examination of this chart shows that in the second semester of 1926-1927 the mathematics department failed 14 percent and the Spanish department 17 percent. The range of ability cards for each class were first given out in the first semester 1927-1928, with a resulting drop of failures in all departments. Here for the first time the teachers had first-hand information concerning the range of ability in each of their classes. Here for the first time they realized the limited capacity of the students in some of their classes, and instead of failing them as had been done heretofore they began to include effort put forth as an important item, with a result that many failing students began to make grades of four, and even three in many cases.

Chart IV shows in like manner the percentage of recommending grades by departments over the same period of time. Starting with the second semester 1926-1927, Chart IV shows a steady increase in the percentage of recommending grades given. An examination of this chart shows that since the second semester of 1926-1927 there has been a steady increase from around 40 per cent of recommending grades until the last two semesters, where there seems to be a tendency to seek a level of around 60 percent. It might be stated here that during the same period the percentage of our students ranking above the lower third at the University of California has increased from 44 percent to 81 percent.

Summary

1. Failures have decreased from as high as 17 percent in some departments to an average of 2 percent for all departments.

2. Giving the teacher the range of ability for each class has aided her to plan a course of study to meet the capacity of the class, the brighter

classes being made to work up to their full capacity, which in turn is a benefit to them at the university.

3. Giving the teacher the range of ability for each class, but without indicating the particular ability of individual students, leaves to her the responsibility of selecting the right ones from the class for recommending grades. Knowing that she will be held to account by the administration spurs her on, with a result of better teaching, as shown by the correlation of teacher's marks to intelligence.

4. A steady increase appears in the percentage of superior students making all recommending grades. Three years ago 55 percent of the students with I. Q's ranging from 119 to 157 were making all recommending grades. This percentage has gradually increased until last semester 70 percent of this same group were making all recommending grades.

5. An increase is shown of from 40 percent to 60 per cent in the number of recommending grades given.

6. An increase from 44 percent to 81 percent appears in the number of our students at the University of California ranking above the lower third of freshmen in the first semester of university work.

FIFTY YEARS OF PUBLISHING

If you are interested in a fascinating story of the growth and development of educational publishing in America; how the publishers of text books and professional books in education have kept pace with the onward movements in public education; how masterful men have labored, succeeded, failed and succeeded again in placing the choicest bits of literature and science at the command of teachers and pupils, you should read the little brochure, *Fifty Years of Publishing,* issued by the Educational Department of Houghton Mifflin Company.—EDITOR.

REPORT OF THE LEGISLATIVE COMMITTEE OF THE ASSOCIATION OF PUBLIC SCHOOL SUPERINTENDENTS

ADOPTED OCTOBER 2, 1930, AT TAHOE CONVENTION

The Association of California Public School Superintendents held its annual meeting at Tahoe Tavern on the concluding day of the annual convention of County and City Superintendents, which met at Lake Tahoe, September 29 to October 2. The report of the legislative committee encompasses a large number of important problems which were dealt with constructively, and this report is here published in full as the earliest means of making it available to the professional groups interested.—EDITOR'S NOTE.

THE legislative committee, consisting of Walter L. Bachrodt, Harry W. Bessac, A. R. Clifton, C. L. Gear, Willard E. Givens, Roy Good, J. E. Hancock, C. R. Holbrook and H. S. Uphohn, submits the following report for your consideration.

The committee received the progress report of the Committee on Administrative Units and wishes to commend this committee for its fine work and to recommend that it be continued.

Committee on Classification of Counties. The classification of counties was discussed and a committee was appointed to consider the matter and make recommendations to the Legislative Committee. The members of this Classification Committee are Sam H. Cohn, Clarence W. Edwards, Walter R. Hepner, C. Ray Holbrook and Hubert S. Upjohn, Chairman.

High School Tax Levies Exceed Legal Limit. Since approximately 40 percent of the high school districts are now levying more than the 75 cent limit fixed by law, and since a recent decision of the Attorney-General holds this to be illegal, the Legislative Committee recommends that further study be given to this matter and that legislation similar to the Wright Act of 1929 be proposed by the committee.

Tax Levy by Mills. Consideration was given to an adjustment of tax rates looking toward legislation that would make it legal to levy taxes by mills where less than a cent additional is needed. This matter was referred to the State Department of Education for further study and possible revision.

Withdrawal of Elementary Districts from High School Districts. The matter of withdrawal of elementary districts from high school districts for the formation of new high school districts, as made possible by law in the last legislature, was considered. The committee went on record as opposing any attempts to further special legislation and asked the State Department of Education to study the law in question looking toward its possible revision.

Change in Time of Primary Election. Since thousands of teachers are away from home, attending summer sessions and traveling during the month of August, when the primary elections are held, and since thousands of parents are away from home on vacation during this month, it seems advisable to give consideration to a possible change in the time of the primary election. This matter was referred to the California Teachers Association and was recommended for careful study and possible legislation.

Committee on Twelve Payment Plan. Since a recent decision of the Supreme Court has affected the payment of teachers' salaries on the twelve-payment plan, a request was made that legislation be introduced which would legalize payment of salaries upon any plan preferred by a district. It was also suggested that provision should be made for paying principals, supervisors and others whose duties require them to work on days when school is not in session. A committee was appointed to recommend legislation in this field. The committee is made up of J. H. Bradley, Chairman; Herbert L. Healy, David E. Martin, Bruce H. Painter and Lewis W. Smith.

Status of Emergency Teachers. Consideration was given to the status of teachers for emergency classes, and it was held that such service should not constitute permanent employment and should not count toward tenure. This matter was referred to the Tenure Committee of the California Teachers Association.

Exchange Teachers. It seems advisable that legislation be enacted to relieve exchange teachers from foreign countries from the provisions of the anti-alien law which requires them to take out first citizenship papers, thereby forfeiting their citizenship in their own country. It was recommended that legislation be studied which would care for conditions governing exchange teachers in all divisions of public schools. This matter was referred to the Committee on Certification of the California Teachers Association.

A. D. A. Affected by Illness. The question of guaranteeing to the district the A. D. A. of children kept out of school by illness or quarantine regulations was considered and referred to the California Teachers Association for study.

Use of Buses Outside District. Consideration was given to the use of school buses in conveying students to points outside the district for contests or recreational purposes. This matter was referred to the California Teachers Association for consideration in conference with Mr. Neilsen of the State Department.

Length of School Day. The law fixing the length of the school day was discussed and was referred to the State Department for study and possible legislation.

Purchase of Supplementary Books. The existing laws covering the purchase of books for supplementary purposes was considered and referred to the Library Committee of the California Teachers Association.

Committee on Use of Library Funds. The practice by county librarians of using school library money to pay overhead charges and salaries of assistants was discussed and referred to a special committee for study and recommendations. This committee is made up of W. H. Hanlon, Herbert L. Healy, David E. Martin, Chairman; W. G. Paden and R. D. White.

Co-Terminus School Districts. A request that legislation be considered which would make city school districts and school districts included within a city school district co-terminus as far as school affairs are concerned was referred to the Superintendents' Committee on Administrative Units.

Two-thirds Vote Suggested for Consolidation. A request was made that the law governing consolidation be changed to require a two-thirds vote of the entire district instead of a majority vote. This was referred to the Superintendents' Committee on Administrative Units.

Absorption of Small Districts. The question of the absorption of small districts within a union high school district was referred to the Superintendents' Committee on Administrative Units.

Consolidation. It was recommended that the Superintendents' Committee on Administrative Units should endeavor to submit a proposal which would make the matter of consolidation simpler.

Visiting Teacher. It was suggested that the words "visiting teacher" in Code sections 3.625, 3.632 and 3.634 be changed to read "home tutor." This matter was referred to the California Teachers Association.

Crediting Attendance at Summer Schools. Consideration was given to possible legislation allowing districts to conduct schools, including trade and business schools, during the summer vacation of the school district, the attendance at the summer school to be approved by the State Department of Education and state apportionment allowed therefor. This matter was left with the Legislative Committee for study and possible legislation.

State Equalization Fund

The following resolutions concerning the state equalization fund were proposed by the Finance Committee and approved by the Legislative Committee:

1. *Resolved,* that the inequalities in school revenues, tax burdens and educational opportunity existing throughout the State of California violate the principles of democracy, justice and a square deal to the children of the State.

2. *Resolved,* that an obvious remedy to these disastrous conditions is the creation of a state equalization school fund to be distributed among the com-

munities in accordance with a plan that takes into consideration the differences in the financial ability of the local communities.

3. *Resolved,* that the California Teachers Association and the California Superintendents Association recommend that action be taken to secure the inauguration and adoption of an equalization public school fund program, such action to include

a. The determination and, if necessary, the adoption of constitutional amendments;
b. The creation of an equalization fund;
c. The legislative enactment of a satisfactory plan for the apportionment of this fund.

4. *Resolved,* that the president of the California Public School Superintendents Association shall immediately appoint an equalization fund committee of five members to review and evaluate the various equalization fund plans which have been, are being, or shall be, prepared by individuals, education committees or by other groups, and shall recommend some such equalization plan or shall formulate some other equalization fund plan, better and more feasible for the State of California.

5. *Resolved,* that necessary funds be provided for the work of this committee.

6. *Resolved,* that if it shall be found that additional sources of revenue shall be necessary to make possible the creation of a state public school equalization fund, consideration shall be given to the graduated net personal income tax, taxes on luxuries, or taxes on other sources of wealth not at present bearing their proportionate share of the burden of taxation.

Kindergarten as Integral Part of Elementary School

The Finance Committee submitted, in addition, the following resolutions, which were approved by the Legislative Committee:

1. *Resolved,* that the kindergarten as an integral part of the elementary school, should receive state and county support on the same basis which governs the support of the elementary grades, without depriving the local district of its present district support.

2. *Resolved,* that as an integral part of the secondary school system of the State the junior high schools should be definitely classified as high schools, to be supported fully on the same basis as that governing the financing of regular four-year and senior high schools.

3. *Resolved,* that the junior college courses of high schools at present receive inadequate state and county aid, and that the support of grades thirteen and fourteen, as maintained in high schools, should receive the same state and county aid now given to grades nine-twelve, inclusive.

4. *Resolved,* that the California Teachers Association and the California Public School Superintendents Association respectfully petition the legislature of the State of California to enact such legislation as shall be necessary to guarantee to the district junior colleges of the State the full payment of the maximum annual quotas of state aid provided by law.

5. *Resolved,* that the teachers colleges of the State as a part of the public education system should have systematic and continuous support commensurate with the scope and importance of the work they are expected to do.

6. *Resolved,* that such legislation as may be necessary, including constitutional amendments, shall be enacted to provide special state aid to school districts to assist in defraying costs of transportation of pupils where the burdens of such costs are excessive.

7. *Resolved,* that a campaign committee be appointed by the president of the Superintendents Association to assist in securing the passage of Item No. 3 on the ballot, which provided for taking the setting of the State Superintendent's salary out of the constitution and giving the legislature the power of setting this salary.

8. *Resolved,* that all legislative bills be sent to the State Department for drafting and that the introduction of bills into the legislature be arranged for by the party or parties throughout the State most interested in the bills.

Retirement Salary

Since the California Teachers Association is working on the problem of retirement and has employed Mr. Buck of New York, the outstanding teachers' retirement statistician in the United States, to help in drawing up retirement legislation, your committee recommends that we take no action in this matter at this time, but that we give every support to the California Teachers Association in its efforts to secure a fair retirement salary which is for the best interests of the children of California.

Tenure for Teachers

Much time and thought have been given to the question of tenure, but since this is a question primarily affecting teachers, and since the California Teachers Association has a committee at work in this field, and since the state council of the California Teachers Association has not yet acted upon the recommendations of this committee, the Legislative Committee of the Superintendents Association thought it wise to take no definite action on this matter at the present time, although the committee agreed that in fairness to the children of the State and in justice to both the teachers and the communities which they serve, some change should be made in the present tenure law. The committee, therefore, recommends that careful study be given to the advisability of a plan which includes a three-year probationary period to be followed by a four-year contract awarded on the same basis as those of superintendents of the State, this contract to be automatic unless the teacher is notified that her services are no longer needed, and all teachers now holding permanent tenure to be awarded a first four-year contract.

State Printing of Textbooks

The Public School Superintendents Committee on the State Printing of Public School Textbooks in California, after a careful study of the whole question, made the following recommendations, which have the enthusiastic support of the Legislative Committee.

WHEREAS, all the evidence submitted, based on an impartial investigation of the whole question of the state printing of school books, points to the need for the repeal of the present state law and opposition to any attempt to extend it;

Resolved, that the committee recommend to the Legislative Committee that they include in their legislative program a vigorous objection to the present state law providing for state printing of textbooks for elementary schools, or any extension of the present law.

Resolved, that the committee favors and recommends to the Legislative Committee the advisability of carrying on an intensive publicity campaign in opposition to state-printed textbooks.

Since the education of the children of California has been handicapped for many years and is still handicapped by the state printing of textbooks due to the following facts:

1. Sixteen of the leading book companies will not leave plates for state printing to any state. This makes approximately 75 percent of the most useful tools of learning—modern books—not available to the children of California.
2. There have been periods of several years when no books in a given subject were available for the use of the children.
3. The average length of adoption on state-printed textbooks in California has been eleven years.
4. Books printed by the State are so inadequate for meeting the needs of present-day education that the local districts have had to spend twice as much as the State has spent in providing books for elementary education.
5. When all cost factors are considered, the state-printed books are costing the people of California more than good books purchased on the open market.
6. The cost of all state-printed textbooks is less than one-half of 1 percent of the total cost of education in California, yet we are allowing this insignificant sum, on the grounds of so-called economy, to keep away from our children the best tools of learning.

the Legislative Committee recommends that the president of this association appoint a campaign committee immediately and that this committee be instructed to carry on a vigorous state-wide campaign in the interests of securing the best tools procurable for a modern educational program.

Respectfully submitted,

LEGISLATIVE COMMITTEE OF THE ASSOCIATION OF PUBLIC SCHOOL SUPERINTENDENTS OF CALIFORNIA.—WILLARD E. GIVENS, *Chairman.*

INSTITUTIONAL MEMBERSHIP IN THE CALIFORNIA SOCIETY OF SECONDARY EDUCATION

The Law

THE Legislature of California in 1929 wrote a new principle into the school code of California. The law recognizes that the people of the State, through boards of school trustees and boards of education, have mutual responsibilities in supporting scientific procedures for the improvement of public education, as well as teachers and school administrators. The law, Section 2.1520 of Chapter 860 of the School Code, provides as follows:

> "The governing board of any school district of any type or class and the junior college board of any junior college district of any type or class, may subscribe for membership for any school under its jurisdiction in any society, association, or organization which has for its exclusive purpose the promotion and advancement of public education through research and investigation and the publication of reports on educational problems. The State Board of Education shall approve a list of such societies, associations and organizations in which membership may be taken and no payment shall be made out of school funds for membership in any society, association or organization whose name does not appear in the list so approved by the State Board of Education. The total amount paid on account of all such memberships shall not exceed thirty dollars ($30.00) for any school during any school year."

Public Service Is a Public Charge

There is nothing new or untried in the principle involved in this new law, except the application of the principle to public education.

Cities and counties have legal provisions whereby they collect and publish at public expense valuable information concerning the material resources of their respective political units.

Legal provision has now been made whereby boards of school trustees and boards of education may use a common agency for a similar service to public education. The schools are institutions of the people, and their improvement and welfare are for the benefit of the children of the people. It is, therefore, just and right that the people should share with teachers such financial responsibility as is involved in measures approved by the State Board of Education for the advancement of education.

Each bit of research work accomplished in any school or school department or in our universities and made available to all the schools of the State is a direct benefit to *each* school in the solution of its own similar problems. A unified service of this kind not only tends to develop the institution of education along constructive lines, but it also eliminates much waste, both human and material.

California Society of Secondary Education Approved by State Department of Education

In compliance with the provisions of the law, the State Board of Education, January 6, 1930, listed the CALIFORNIA SOCIETY OF SECONDARY EDUCATION as one of the organizations in which boards of school trustees and boards of education may subscribe for Institutional membership for schools under their jurisdiction.

In reporting the action of the State Board of Education to the CALIFORNIA SOCIETY OF SECONDARY EDUCATION, Superintendent of Public Instruction Kersey wrote:

> "The law making this possible was supported by friends of public education and was passed by the Legislature for the express purpose of enabling the widely scattered units of school administration in California to co-operate with each other through a common agency. They thus may take advantage of all the research work and educational studies carried on in the several schools and school departments of the State.
>
> "The CALIFORNIA SOCIETY OF SECONDARY EDUCATION has done valuable pioneer work in this field during the past four years. *It is my hope that Boards of School Trustees and Boards of Education who administer secondary schools will see the advantage to be gained by subscribing for membership in the* CALIFORNIA SOCIETY OF SECONDARY EDUCATION *for schools under their jurisdiction.*" (Italics are by editor.)
>
> *Cordially yours,*
>
> (Signed) V. KERSEY,
>
> *Superintendent of Public Instruction.*"

A Service Agency to Secondary Education

Service to public education through a common agency is both the purpose of the law and the clear implication of Superintendent Kersey's statement. By this law the several schools and school departments of the State are enabled at a small cost to each to purchase a service of mutual benefit to the schools of the State that could not otherwise be obtained. And by the purchase of such service through institutional memberships at a small annual fee, the member schools enable a common agency, such as the CALIFORNIA SOCIETY OF SECONDARY EDUCATION, to furnish a service to education that could not otherwise be rendered.

Institutional Membership Fee

The annual Institutional Membership fee for secondary schools in the CALIFORNIA SOCIETY OF SECONDARY EDUCATION is $10.00. By the provisions of Section 2.1520 of the School Code and the action of the State Board of Education, this fee may be legally paid by the governing board from any funds available. *It is a legal charge against the school district.* Each member school will be entitled to one copy of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION and one copy of such other bulletins and reports as may be published by the Society from time to time.

Application for Institutional membership should be made to the
CALIFORNIA SOCIETY OF SECONDARY EDUCATION
2163 Center Street, Berkeley, California

Institutional Members

The following schools were enrolled as Institutional Members of the California Society of Secondary Education, October 1, 1930:

Institution	*Principal*	*Post Office Address*
Citrus Union High School and Junior College	Floyd S. Hayden	Azusa
Kern County Union High School and Junior College	H. A. Spindt	Bakersfield
Berkeley Continuation School	G. C. Mann	Berkeley
Berkeley High School	C. L. Biedenbach	Berkeley
Burbank Junior High School	L. L. Standley	Berkeley
Edison Junior High School	H. H. Glessner	Berkeley
Garfield Junior High School	D. L. Hennessey	Berkeley
Willard Junior High School	Wellyn B. Clark	Berkeley
Brawley Union High School and Junior College	Percy E. Palmer	Brawley
Liberty Union High School	E. G. Nash	Brentwood
Burlingame High School	F. Grant Marsh	Burlingame
Calipatria Union High School	E. Lester Cox	Calipatria
Coast Union High School	Allen T. Doggett	Cambria
Campbell Union High School	D. H. Cramer	Campbell
Ceres Union High School	C. F. Perrott	Ceres
Colton Union High School	Donald H. McIntosh	Colton
Colusa Union High School	George H. Pence	Colusa
Compton Junior College	O. Scott Thompson	Compton
Compton Union High School	O. Scott Thompson	Compton
Corona High School	Glen D. Wight	Corona
Courtland Union High School	S. J. Halley	Courtland
Davis Joint Union High School	Homer H. Cornick	Davis
Eagle Rock High School	Helen C. Babson	Eagle Rock
Elsinore Union High School	Edgar H. McMath	Elsinore
Emery Junior-Senior High School	John H. Napier	Emeryville
Escondido Union High School	M. W. Perry	Escondido
Eureka High School	Joseph T. Glenn	Eureka
Ferndale Union High School	Ralph B. Doughty	Ferndale
Fillmore Union High School	W. R. Hull	Fillmore
Fortuna Union High School	G. J. Badura	Fortuna
Fowler Union High School	E. E. Wahrenbrock	Fowler
Central Union High School	Cree T. Work	Fresno
Half Moon Bay High School	D. C. Barnett	Half Moon Bay
Hamilton Union High School	Mrs. Ella M. Barkley	Hamilton City
Hanford Union High School	J. L. Neighbor	Hanford
Hayward Union High School	Frederic P. Johnson	Hayward
Healdsburg High School	Edwin Kent	Healdsburg
Hilmar Union High School	C. G. Fry	Hilmar
Huntington Park Union High School	Karp L. Stockton	Huntington Park
Marin Union Junior College	Albert C. Olney	Kentfield
King City Union High School	H. O. Williams	King City
Kingsburg Joint Union High School	I. V. Funderburgh	Kingsburg
Linden Union High School	Robert Reed	Linden
Lodi Union High School	Victor A. Rohrer	Lodi
Lompoc Union High School	Perry H. Benson	Lompoc
James A. Foshay Junior High School	Nellie I. Potter	Los Angeles
Polytechnic Evening High School	Ralph W. Detter	Los Angeles
Manteca Union High School	H. B. Long	Manteca
Marysville Union High School	Curtis E. Warren	Marysville
Yuba County Junior College	Curtis E. Warren	Marysville
Fall River Joint Union High School	Edward W. Gillis	McArthur
Merced Union High School	A. W. Meany	Merced

Monrovia-Arcadia-Duarte High School	A. R. Clifton	Monrovia
Excelsior Union High School	David Stouffer	Norwalk
Frick Junior High School	Clyde P. Finger	Oakland
Golden Gate Junior High School	Roy T. Nichols	Oakland
Lowell Junior High School	James A. Hensley	Oakland
Oakland High School	L. P. Farris	Oakland
University High School	George A. Rice	Oakland
Westlake Junior High School	Edgar E. Muller	Oakland
Palo Alto Union High School	Walter H. Nichols	Palo Alto
John Marshall Junior High School	George Hetzel	Pasadena
McKinley Junior High School	Leonard O. Bigham	Pasadena
John Muir Technical High School	Rufus Mead	Pasadena
Pasadena High School	John W. Harbeson	Pasadena
Pasadena Junior College	John W. Harbeson	Pasadena
Pasadena Part-Time High School	Wallace A. Newlin	Pasadena
George Washington Junior High School	Nellie Greene Clarke	Pasadena
Woodrow Wilson Junior High School	Arthur M. Brown	Pasadena
Red Bluff Union High School	Robert R. Hartzell	Red Bluff
Roseville Union High School	J. W. Hanson	Roseville
Professional Library		Sacramento
Sacramento Senior High Library		Sacramento
Sacramento Continuation High Library		Sacramento
Sacramento Evening High School Library		Sacramento
Sacramento Junior College	J. B. Lillard	Sacramento
Sacramento Junior High School Library		Sacramento
Salinas Union High School and Junior College	Melrowe Martin	Salinas
San Bernardino Valley Union Junior College	J. B. Griffing	San Bernardino
Theodore Roosevelt Junior High School	Bessie I. Cole	San Jose
San Jose Senior High School	R. B. Leland	San Jose
Woodrow Wilson Junior High School	Nell O'Brien	San Jose
San Luis Obispo High School	J. W. Thomson	San Luis Obispo
San Mateo District Junior College	Robert J. Hopkins	San Mateo
San Mateo High School	F. J. McConville	San Mateo
La Cumbre Junior High School	W. J. Kircher	Santa Barbara
Santa Barbara High School	Harvey J. Holt	Santa Barbara
Santa Barbara Junior High School	Roy P. Eichelberger	Santa Barbara
Santa Maria Union High School	A. A. Bowhay, Jr.	Santa Maria
Tamalpais Union High School	Ernest E. Wood	Sausalito
Fremont Union High School	Verne Hall	Sunnyvale
Lassen Union High School and Junior College	Robert M. Fulton	Susanville
Ventura Junior High School	B. M. George	Ventura
Ventura Senior High School and Junior College	E. L. Van Dellen	Ventura
Watsonville Union High School	T. S. MacQuiddy	Watsonville
Woodland High School	Raymond H. Butzbach	Woodland

Pledges from many other schools have been received, but only those schools are above listed for which membership has been paid.

CORPORATE MEMBERSHIP

Control. While the California Society of Secondary Education has several classes of memberships, the control of the Society is vested in the Corporate members. This action resulted from a referendum to over one thousand members and other persons prominent in the program of the secondary schools, in which eighty-one per cent of those voting expressed the opinion that the control of the Society should be placed in the Corporate membership.

Incorporation of 1930. In April, 1930, the California Society of Secondary Education was incorporated under Section 606 of the Civil Code, succeeding the California Society for the Study of Secondary Education which was incorporated under different sections of the Code in 1925 as the successor of the California High School Teachers Association. By this reincorporation of 1930 the Society is recognized under the law as any other educational institution in the State. It is governed by a Board of Trustees composed of twenty-five members who are elected by the Corporate members.

Corporate Membership Unrestricted. Corporate membership is unrestricted, and it is *especially provided that Associate members are eligible to Corporate membership.* The article governing Corporate membership reads as follows:

1) *Corporate Members* shall be entitled to all the professional privileges of the corporation, to all bulletins, periodicals and reports published by the corporation, and shall have the right to vote and to hold office. The annual membership fee for Corporate Members shall be $5.00.

Provision for Associate Membership. Associate membership was created for the purpose of enabling teachers who do not desire to enroll as corporate members to associate themselves with the Society in faculty groups as a means of securing the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION at a nominal membership fee of $2.00, while the subscription price to others is $3.00.

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THE SPIRIT OF A PROFESSION

THE Fortuna Union High School is the first school to test 100 per cent professionalism in all classes of membership in the California Society of Secondary Education for 1930-31. The faculty enrolled 100 per cent in Associate membership, the principal enrolled as a Corporate member, and the Trustees took Institutional membership for their school.

The Coast Union High School at Cambria came second, with 100 per cent Associate membership and an Institutional membership.

Pasadena was the first city with more than one high school to enroll all of the secondary schools of the city as Institutional members. This result was accomplished on the recommendation of Dr. John A. Sexson, Superintendent. Pasadena schools also score in the "X-group" in Associate membership; or perhaps we should say in the "upper quartile." By similar action on the part of Dr. Lewis W. Smith, Superintendent, Berkeley came in second with Institutional membership for all of the secondary schools of the city. Berkeley was followed by Santa Barbara which responded 100 per cent on the initiative of Superintendent Paul Stewart, and the rest of the story to October 1 is to be found in the list of Institutional members printed on a preceding page. It

may also be here said that the Berkeley and Santa Barbara High Schools have been in the "upper quartile" in Associate membership for the past five years.

Professional accomplishment is not a matter of the size of the school, of city or country, or north or south; it is spirit.

We are here tempted to quote from the report of a committee on professional reading (1926):

> *In any balanced program of reading and study for teachers in secondary schools in this State we would list* THE CALIFORNIA QUARTERLY OF SECONDARY EDUCATION *as of first importance. . . . Professionally minded teachers find it increasingly necessary to read the current literature of their profession. . . . Only by such a program of professional reading can the teacher expect to keep in sympathetic and intelligent touch with the main currents of development in education, and himself become an important factor in determining educational policy and procedure. This is just what* THE QUARTERLY *enables him to do.*
>
> DR. H. B. WILSON, *Chairman;* DR. W. H. SNYDER, KATHARINE L. CAREY, HOWARD O. WELTY, GEORGE C. JENSEN, WILLIAM J. DREW, *Committee.*

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